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## ENDOMETRIOSIS

### A STUDY OF ONE HUNDRED AND SEVENTEEN CASES WITH SPECIAL REFERENCE TO CONSTRICTING LESIONS OF THE RECTUM AND SIGMOID COLON

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Medical literature of the past two decades is replete with studies of most of the fundamental characteristics of endometriosis. The importance of this disease as a cause of constricting lesions of the rectum and sigmoid colon, however, has not been sufficiently stressed, nor is adequate roentgenologic information available. Correct preoperative diagnoses of this condition cannot be minimized. Constricting endometrial lesions of the rectum and sigmoid colon often are confused with carcinoma, and patients sometimes are subjected to radical resection of the bowel,[1] whereas castration usually will suffice. Many constricting endometrial lesions of the rectum and sigmoid often may be regarded as some other inflammatory or infectious condition and receive medical management with little or no improvement.

#### PATHOLOGIC CHARACTERISTICS

The term "endometriosis" in this discussion designates islands of ectopic adenomatous tissue with histologic and functional characteristics similar to that of normal endometrium and located in the female pelvis outside the uterine wall and cavity. Implants on the peritoneal surface of the uterus have been included in this study. The term "adenoma" refers to islands of endometrial tissue within the myometrium.

Endometriosis of the sigmoid colon or rectum resembles endometrial lesions elsewhere. Implants usually occur on the serosal surface with subsequent involvement of the muscular coats. The mucosa only occasionally is invaded. An associated intense inflammatory reaction is always present. Endometriosis of the rectum and sigmoid colon usually is considered a benign lesion. Josefsson[2] and the Pattons[3] were unable to find in medical literature an unquestionable case with development of carcinoma from endometriosis of the sigmoid colon. Braine[4] reports a case of rectal carcinoma concomitant with stenosing rectosigmoidal endometrioma in the rectal wall. Jose and Hanson[5] found a carcinoma of the sigmoid with endometrioma in the pelvic pouch and vaginal fornix simulating metastatic carcinomatous lesions of the regional lymphatic nodes. Nylander[6] reports a spindle cell sarcoma of the rectum containing endometrial tissue. Schofield and Bacon[7] cite cases reported by Seitz[8] and Thomson[9] in which a malignant condition had developed from endometriosis in the rectovaginal septum, and 1 reported by Lockyer[10] presenting metastatic endometrial tissue in the lung.

The frequency of associated pelvic disorders is noteworthy. Of 118 cases of endometriosis Keene and Kimbrough[11] found that 93 had complicating pelvic disorders and more than half had uterine myomas. The combined series of Counseller[12] and Masson[13] reveal associated pelvic disorders in 54.5 per cent of 884 cases of adenomyosis of the uterus and pelvic endometriosis.

#### INCIDENCE OF ENDOMETRIOSIS

The incidence of pelvic endometriosis has been demonstrated by Green-Armytage,[14] who found endometriomas in 8.9 per cent of one thousand consecutive abdominal operations. Ten per cent of 342 cases presented microscopic evidence of endometriosis. Sampson[15] found endometriosis in sixty-four of two hundred and ninety-six laparotomies (21.6 per cent). From several series[16] he concluded that pelvic endometriosis occurs in 10 to 20 per cent of all women between 30 years of age and the menopause. Jones[17] stated that about 5 per cent of women 40 years of age have fibroids

From the Department of Radiology, St. Luke's Hospital.

1. Bartlett, R. W.: Endometriosis of Sigmoid, Am. J. Surg. **29:** 122 (July) 1935. Dukes, C. E.: Endometrioma of Pelvic Colon, Proc. Roy. Soc. Med. **31:** 693 (April) 1938. Cattell.[19]
2. Josefsson, H.: Diagnosis of Strangulating Endometriosis in Sigmoid Colon; Case, Acta. obst. et gynec. Scandinav. **19:** 256, 1939.
3. Patton, C. L., and Patton, R. J.: Endometriosis of Sigmoid as Cause of Acute Intestinal Obstruction, Am. J. Surg. **53:** 265 (Aug.) 1941.
4. Braine, J.: Rectal Cancer Concomitant with Stenosing Rectosigmoidal Endometrioma Developed in Rectal Wall; Abdominoperineal Amputation with Patient in Good Health Fourteen Months Later, Arch. d. mal. de l'app. digestif **22:** 673 (June) 1932.
5. Jose, I. B., and Hanson, B. S.: Carcinoma of Sigmoid and Endometrioma in Pelvic Pouch and Vaginal Fornix, M. J. Australia **2:** 422 (Oct. 1) 1932.
6. Nylander, P. E. A.: Spindle-Celled Sarcoma of Rectum Containing Endometrial Tissue; Case, Zentralbl. f. Chir. **65:** 74 (Jan. 8) 1938.
7. Schofield, J. D., and Bacon, H. E.: Endometriosis of Rectum and Sigmoid; Review of Literature and Case Report, Ann. Surg. **107:** 1022 (June) 1938.
8. Seitz, L.: The Origin, Clinic and Therapy of Endometriosis (Adenomyosis), München. med. Wchnschr. **79:** 741 (May) 1932 (cited from Schofield and Bacon).
9. Thomson, A. P.: Malignant Endometriosis with Metastasis to the Lungs, Proc. Roy. Soc. Med. **19:** 16, 1926 (cited from Schofield and Bacon).
10. Lockyer, C.: Adenomyoma, in Dean Lewis's Practice of Surgery, Hagerstown, Md., W. F. Prior Company, 1936, **11,** chapter 18, p. 16 (cited from Schofield and Bacon).
11. Keene, F. E., and Kimbrough, R. A.: Endometriosis—A Review Based on the Study of One Hundred and Eighteen Cases, J. A. M. A. **95:** 1164 (Oct. 18) 1930.
12. Counseller, V. S.: Endometriosis—A Clinical and Surgical Review, Am. J. Obst. & Gynec. **36:** 877 (Nov.) 1938.
13. Masson, J. C.: Surgical Significance of Endometriosis, Ann. Surg. **102:** 819 (Nov.) 1935.
14. Green-Armytage, V. B.: Endometriomata: The Five Clinical Types, Brit. M. J. **1:** 602 (April 8) 1933.
15. Sampson, J. A.: Benign and Malignant Endometrial Implants in the Peritoneal Cavity and Their Relation to Certain Ovarian Tumors, Surg., Gynec. & Obst. **38:** 287 (March) 1924.
16. Sampson, J. A.: Perforating Hemorrhagic (Chocolate) Cysts of the Ovary, Their Importance and Especially Their Relation to Pelvic Adenomas of Endometrial Type, Arch. Surg. **3:** 245 (Sept.) 1921; Endometriosis of the Sac of a Right Inguinal Hernia, Associated with a Pelvic Peritoneal Endometriosis and an Endometrial Cyst of the Ovary, Am. J. Obst. & Gynec. **12:** 459 (Oct.) 1926; Metastatic or Embolic Endometriosis Due to the Menstrual Dissemination of Endometrial Tissue into the Venous Circulation, Am. J. Path. **3:** 93 (March) 1927; Peritoneal Endometriosis Due to the Menstrual Dissemination of Endometrial Tissue into the Peritoneal Cavity, Tr. Am. Gynec. Soc. **52:** 171, 1927; footnote 15.
17. Jones, H. O.: Personal communication to the authors.

complicated by endometriosis. Patients with endometriosis in the absence of fibroids are not included. The foregoing surveys indicate that endometriosis develops in approximately 15 per cent of all women during their active menstrual life.

### DISTRIBUTION OF ENDOMETRIOSIS

The relative frequency of endometriosis involving the sigmoid colon and rectum found in a study of the clinical and operative records of 117 patients at St. Luke's Hospital from 1939 to 1941 inclusive is listed in table 1. In this table and throughout the discussion "endometriosis of the rectosigmoid" designates any endometrial lesion of the sigmoid colon, rectum or rectovaginal septum which by reason of its location, by various degrees of extension or because of the associated inflammatory reaction could encroach on the lumen of the bowel or constrict this portion of the colon or rectum.

Endometriosis of the rectosigmoid was found in 47 of 117 cases. Allen [18] found endometriosis of the bowel and rectovaginal septum in 41 of his 112 patients.

TABLE 1.—*Relative Frequency of Endometrial Lesions in One Hundred and Seventeen Cases*

| | |
|---|---|
| Ovary | 83 |
| Rectosigmoid | 47 |
| Peritoneal surface of fallopian tubes and broad ligaments | 42 |
| Peritoneum of cul-de-sac (not involving other structures) | 41 |
| Uterosacral ligaments | 40 |
| Peritoneal surface of uterus | 31 |
| Peritoneal surface of urinary bladder | 16 |
| Intraperitoneal round ligament | 3 |
| Umbilicus | 3 |
| Laparotomy scar | 3 |
| Appendix | 2 |

TABLE 2.—*Relative Frequency of Rectosigmoid Endometriosis (Including Lesions of the Sigmoid, Rectum and Rectovaginal Septum)*

| | Series Total | Recto-sigmoid | Per Cent |
|---|---|---|---|
| Allen [18] | 112 | 41 | 37.0 |
| Cattell [19] | 104 | 17 | 16.0 |
| Counseller [12] and Masson [13] | 162 | 51 | 31.0 |
| Keene and Kimbrough [11] | 118 | 6 | 5.0 |
| Present series | 117 | 47 | 40.0 |
| Total | 613 | 162 | 26.0 |

Cattell's [19] series of 104 cases of endometriosis included 17 in which there was involvement of the sigmoid, rectum or rectovaginal septum. The combined series of Counseller [12] and Masson [13] include 884 cases of uterine adenomyosis and pelvic endometriosis, of which 162 showed pelvic endometriosis [20] exclusive of uterine adenomyosis. They found 120 ovarian lesions and 51 lesions of the sigmoid, rectum and rectovaginal septum. Keene and Kimbrough [11] in 118 cases list only 6 presenting involvement of the rectovaginal septum, a figure much lower than in most series reported. The relative frequency of rectosigmoid lesions in pelvic endometriosis is summarized in table 2.

About 25 per cent of all women with pelvic endometriosis have lesions of the rectosigmoid. By combining this figure with the previous estimate that approximately 15 per cent of all women develop endometriosis, it may be concluded that from 2 to 4 per cent of all women at some time during their active menstrual life may develop endometriosis of the sigmoid, rectum or rectovaginal septum. At this site it is a potential factor in causing a constricting or obstructing lesion of the colon and rectum. Endometriosis of the rectosigmoid is important, therefore, in the etiology of constricting lesions of the rectosigmoid, especially in women during their active menstrual life.

18. Allen, E.: A Clinical and Experimental Study of Endometriosis, Am. J. Obst. & Gynec. **26:** 803 (Dec.) 1933.

19. Cattell, R. B.: Endometriosis of Colon and Rectum with Intestinal Obstruction, New England J. Med. **217:** 9 (July 1) 1937.

20. Counseller, V. S.: Personal communication to the authors.

### INCIDENCE OF OBSTRUCTING ENDOMETRIOSIS OF THE RECTOSIGMOID

An accurate determination of the incidence of obstructing endometriosis of the rectosigmoid is difficult. Many lesions of the rectosigmoid have insufficient involvement of the bowel to produce constriction. The degree of obstruction is probably roughly proportional to the duration of the lesion while under active hormonal influence of the ovaries. Some patients reach the menopause before a constricting lesion can develop. Others are castrated because of an associated pelvic disorder.

A review of the medical literature since 1931 reveals numerous reports of partial or complete obstruction of the rectum or sigmoid colon caused by endometriosis.[21] Other reports [22] discuss variable degrees of rectosigmoid involvement. Only a few series giving the incidence of obstructing endometriosis of the rectosigmoid were found. Cattell [19] found that 12 of 17 patients with lesions of the sigmoid or rectum had some degree of obstruction. Of Mayo and Miller's [23] 38 patients with involvement of the rectum and sigmoid colon 18 had a proctoscopic examination and 15 showed a narrowed bowel lumen. Of the 47 patients with rectosigmoid endometriosis found in the present series, 21 had symptoms indicating some degree of obstruction. Table 3 represents a summary of these series.

Almost half of all endometrial lesions of the rectum or sigmoid colon cause a degree of constriction sufficient to produce symptoms at some time during active menstrual life. This estimate, of course, is subject to the inaccuracies of pyramided statistics. That these lesions are more frequent than usually considered may be explained by the fact that rectosigmoid lesions and bowel symptoms so often are subordinate to the other symptoms of endometriosis and associated pelvic disorders. When the true diagnosis is overlooked, relief may be obtained by the menopause.

### CLINICAL CHARACTERISTICS OF CONSTRICTING ENDOMETRIOSIS OF THE RECTOSIGMOID

Endometriosis of the rectosigmoid is characterized by symptoms similar to other forms of pelvic endometriosis and by gastrointestinal complaints which

21. Bazy, L.; Blondin, S., and Chene, P.: Clinical and Practical Interest of Rectal Endometrioma; 2 Cases, Presse méd. **47:** 785 (May 24) 1939. Behrendt, H., and Neumeyer, G.: Endometriosis Causing Intestinal Ileus; Case, Beitr. z. path. Anat. u. z. allg. Path. **97:** 597, 1936. Bergeret, A., and Rachet, J.: Endometrioma of Sigmoid Colon; Case, Mém. Acad. de chir. **65:** 959 (June 28) 1939. Dawson, J. B.: Early Endometriotic Invasion of the Sigmoid, M. J. Australia **2:** 676 (Nov. 9) 1929. Gale, C.: "Endometrioma tous" Bowel Stricture, with Unusual Complication (Impaction of Fishbone), Australian & New Zealand J. Surg. **1:** 323 (Dec.) 1931. Grigsby, G. P.: Endometriosis as Cause of Intestinal Obstruction; 2 Cases, South. Surgeon **10:** 8 (Jan.) 1941. Hepburn, J. J.: Endometriosis as Cause of Acute Intestinal Obstruction, New England J. Med. **217:** 6 (July 1) 1937. Murphy, E. A.: Endometriosis Simulating Tumors of Bowel; Collective Review, West. J. Surg. **46:** 78 (Feb.) 1938. Okinczyc, J.: Endometrioma of Pelvic Colon Causing Occlusion; Surgical Therapy of Case, Mém. Acad. de chir. **62:** 271 (Feb. 26) 1936. Papin, F.: Stenosing Endometrioma of Sigmoid Ansa; Intestinal Resection; Case, ibid. **65:** 418 (March 22) 1939. Schuler, B.: Ileus Caused by Endometrioid Proliferations Originating from Intestinal Wall, Zentralbl. f. Chir. **58:** 399 (Feb. 14) 1931. Bartlett.[1] Braine.[4] Dukes.[1] Goodwin.[22] Josefsson.[2] Patton and Patton.[2] Schofield.[7]

22. Goodwin, W. H.: Endometriosis with Reference to Intestinal Implantation, Virginia M. Monthly **61:** 257 (Aug.) 1934. Lefrancois, C.: Endometriosis of Sigmoid Colon; Case, J. de l'Hôtel-Dieu de Montréal **10:** 40 (Jan.-Feb.) 1941. Oehlecker, F.: Adenomyosis of Sigmoid Flexure at Point Where It Enters Rectum; Case, Zentralbl. f. Chir. **59:** 1212 (May 14) 1932. Rosser, Curtice: Rectal and Sigmoidal Endometriosis, Dallas M. J. **22:** 32 (March) 1936.

23. Mayo, C. W., and Miller, J. M.: Endometriosis of Sigmoid, Rectosigmoid and Rectum, Surg., Gynec. & Obst. **70:** 136 (Feb.) 1940.

depend on the duration of the lesion and the presence or absence of a constriction.

In the reported series of 117 patients with pelvic endometriosis the youngest was 18 years of age at the time of operation, the oldest was 67 and 30 were 30 years old or less. The age distribution at the time of onset of symptoms is demonstrated in table 4. The age distribution of patients with lesions of the rectosigmoid resembled that of the group. Of 21 patients with symptoms of an obstructing lesion only 3 were more than 40 years of age; none were over 45 at the onset of symptoms. One patient was 24; 5 of the 21 patients were 30 or younger at the time of operation.

Most patients with endometriosis have a relatively long duration of symptoms. The average duration in the present series was 2.8 years, in the group of 21 patients with obstructing lesions of the rectosigmoid 3.3 years, in the group of 26 patients with rectosigmoid lesions but without evidence of obstruction 2.3 years, the lesions here being of more recent origin.

A high incidence of sterility usually is considered a characteristic of endometriosis and associated pelvic disease. In the present series 40 patients (34 per cent) complained of absolute sterility; 48 (41 per cent) had been pregnant, all pregnancies having been prior to the onset of symptoms of endometriosis, and 29 (25 per cent) were unmarried or without established sterility. Keene and Kimbrough [11] found absolute sterility in 40.9 per cent of 118 cases of endometriosis and in the remaining patients an average interval of 9.5 years elapsed since the birth of the last child. Allen [18] was impressed by the prevalence of relative sterility in his study of 112 patients with endometriosis.

A high incidence of menstrual abnormalities was found in the present series. Ninety-five (81 per cent) complained of dysmenorrhea of the acquired type, metrorrhagia or menorrhagia. Allen [18] reported a high incidence of menstrual irregularities. Counseller [12] and Masson [13] found menstrual abnormalities in 80 per cent of 884 cases of adenomyosis of the uterus and pelvic endometriosis.

The symptoms of patients with constricting endometriosis of the rectosigmoid include presenting complaints of menstrual abnormalities, absolute or relative sterility and a long history of bowel symptoms suggesting an obstruction. Weight loss or other evidence of ill health is seldom present. The most frequent complaint of the 21 patients with obstructive symptoms in the present series was severe progressive constipation usually associated with pain in the low abdomen, which was worse at menstruation. Four patients complained of pain with bowel movements; two had cramps and diarrhea during menstruation; one patient had small ribbon-like stools associated with cramps. Other symptoms included flatulence, abdominal distention, bloating and abdominal discomfort. Fourteen of the 21 patients (67 per cent) had exacerbations of bowel symptoms just before or during menstrual periods.

Endometriosis of the rectosigmoid may have few significant physical manifestations, depending on the location and extent of the lesion. Sigmoidoscopic examination may reveal narrowing of the lumen of the bowel with intact but puckered, red and congested mucosa. The mucosa is rarely sufficiently involved or ulcerated to make biopsies feasible. Biopsy then establishes a positive diagnosis and excludes carcinoma. The intact mucosa explains the low incidence of gross or occult blood which would not be accounted for by other anorectal disease. Endometriosis of the rectosigmoid rarely causes loss of weight or cachexia. The concentration of hemoglobin in the blood may be decreased significantly, depending on the severity and duration of associated menorrhagia.

### ROENTGENOLOGIC CHARACTERISTICS OF CONSTRICTING ENDOMETRIOSIS OF THE RECTOSIGMOID

The barium contrast enema has been considered of little value in the diagnosis of constricting endometrial lesions of the rectum and sigmoid colon. Mayo and Miller [23] state that roentgenograms may reveal constricting lesions which have no diagnostic characteristics. Maclean [24] believes that a barium enema contributes little to the diagnosis except to demonstrate an obvious filling defect. The Pattons [3] believe that a barium enema may reveal a filling defect with normal mucosal pattern. Medical literature since 1931 includes the report by Josefsson [2] of 1 case in which characteristic roentgenologic signs were present. He states that the characteristic roentgenologic findings are a well circumscribed stenosis of the intestinal lumen with an

TABLE 3.—*Obstructing Endometriosis of the Rectosigmoid*

| | Number of Patients with Some Degree of Obstruction | Total Number of Patients with Rectosigmoid Lesions |
|---|---|---|
| Cattell [19] | 12 | 17 |
| Mayo and Miller [23] | 15 | 38 |
| Present series | 21 | 47 |
| Total | 48 = 47% of | 102 |

TABLE 4.—*Age in Years at Onset of Symptoms Referable to Pelvic Endometriosis*

| | Number | Per Cent |
|---|---|---|
| 16 to 20 | 5 | |
| 21 to 25 | 18 | |
| 26 to 30 | 19 | |
| | 42 | 36 |
| 31 to 35 | 22 | |
| 36 to 40 | 25 | |
| | 47 | 40 |
| 41 to 45 | 26 | |
| 46 to 50 | 2 | |
| | 28 | 24 |
| Total | 117 | |

intact mucous membrane. The intestinal portions close to the constricted region present only a picture of mild colitis. The folds of the mucous membrane at the site of the stenosis are prickly and irregular but not ragged and stiff as in carcinoma. He stresses the importance of roentgenologic examinations during menstruation and in the intervals to demonstrate changes in the constricting lesion.

The presence of positive roentgenologic signs of endometriosis of the rectosigmoid depends on the extent of bowel involvement and on the location of the lesion. Implants on portions of the bowel which are freely suspended by a mesentery are less likely to have constricting lesions than are portions of the bowel which are partially extraperitoneal and more firmly attached, such as the rectum and lower portion of the sigmoid colon. Two factors probably produce obstructing lesions: first, the endometrial tumor which may involve the bowel wall sufficiently to compromise the lumen, although the mucosa rarely is invaded; second, the intense inflammatory reaction, which is the principal

24. Maclean, N. J.: Endometriosis of Large Bowel, Canad. M. A. J. **34**: 253 (March) 1936.

basis for the roentgenologic findings. This inflammatory reaction may result in fibrosis and cicatricial contracture of the bowel wall when lesions have been present for a considerable time, although patients with definite constricting lesions examined in this department by barium enemas after surgical castration had almost complete restoration of the lumen of the bowel.

Four of the 21 patients with constricting lesions of the rectosigmoid in the present study had barium enemas (figs. 1 and 2) which demonstrated certain roentgenologic signs: 1. A filling defect of considerable length involved approximately 4 to 7 inches of the lumen of the bowel. 2. A sharp demarcation of the filling defect was similar to carcinoma. 3. Other portions of the colon showed little evidence of disease. 4. The fluoroscopic examination and the barium-air contrast films revealed an essentially intact mucous membrane. 5. The involved portions of the bowel were relatively fixed and exquisitely tender to palpation during the fluoroscopic examination.

Endometriosis of the rectosigmoid should be differentiated most frequently from primary carcinomas of the rectum and sigmoid colon or other infectious or inflammatory lesions. It usually can be differentiated clinically from carcinomas by the younger age group, associated sterility and menstrual abnormalities, absence of loss of weight and anemia and the relatively long duration of symptoms. Exacerbation of symptoms coinciding with the menstrual period is confirmatory

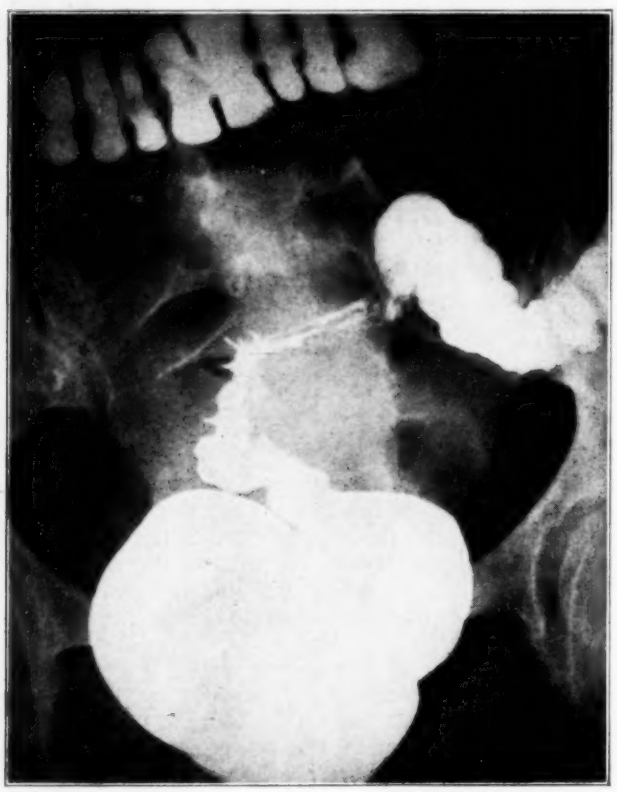

Fig. 1 (E. M., aged 32).—Preoperative barium contrast roentgenogram demonstrating filling defect of sigmoid colon caused by endometriosis.

evidence of endometriosis. Endometriosis of the rectosigmoid is characterized roentgenologically by a long filling defect with sharp regular borders, intact mucosa, inconstancy of the filling defect and fixation of the bowel, which is exquisitely tender to palpation. Carcinoma, in contrast, is characterized by a short filling defect, sharp irregular margins, ragged, moth eaten mucosa, constant filling defect and usually absence of fixation or exquisite tenderness on palpation. Infectious lesions usually may be differentiated clinically on the basis of fever, leukocytosis, loss of weight, anemia, stool examinations and bacteriologic or serologic tests.

Fig. 2 (E. M., aged 32).—Spot film during fluoroscopic examination to show intact mucosa.

These lesions are characterized roentgenologically by a relatively long filling defect with ill defined irregular borders, distorted mucosal pattern, an indefinite line of demarcation between normal and pathologic portions, variable filling defect influenced by medical treatment and considerable fixation and tenderness on palpation.

### TREATMENT OF ENDOMETRIOSIS OF THE RECTOSIGMOID

The treatment of endometriosis of the rectosigmoid is summarized by Cattell,[19] who emphasizes the importance of conservative treatment in patients under 35 years of age whenever possible. He states that radical treatment is necessary in most cases in which there is involvement of the colon and rectum. Such cases, irrespective of age, require removal of both ovaries. It is rarely necessary to resect the bowel. Pemberton[25] restricts roentgen therapy to patients of whom conservative treatment to preserve the childbearing function has failed.

Roentgen examination of the colon by barium enemas is important following sterilization. All patients in the present series with constricting lesions of the rectosigmoid caused by endometriosis, when examined more than two months after surgical castration, had complete restoration of the lumen of the bowel (figs. 3 and 4). Palpation during the fluoroscopic examination

25. Pemberton, F. A.: Endometrioma of the Female Genital Organs, New England J. Med. **217**: 1 (July 1) 1937; in discussion of paper by Counseller.[12]

demonstrates a freely movable colon without tenderness. These findings differentiate endometriosis from constrictions caused by a malignant growth or inflammatory processes, in which little or no improvement follows sterilization.

## COMMENT

The important role of endometriosis as a cause of constricting lesions of the rectosigmoid is demonstrated by the preceding statistics. Careful evaluation of the clinical history, physical examination and roentgenologic studies of the colon by means of barium enemas is of value in obtaining an accurate preoperative diagnosis of the more advanced cases of constricting endometriosis of the rectosigmoid when a differentiation from carcinoma or from certain nonoperable inflammatory lesions is essential. The differential diagnosis of any constricting lesion of the rectosigmoid in women during active menstrual life should include endometriosis as a prominent etiologic factor.

A correct preoperative diagnosis of endometrial implants on the rectosigmoid colon without compromise of the lumen of the bowel was made in several patients examined in this department. In the less advanced lesions there was a well demarcated, localized, irritable segment, usually 3 to 5 inches long and quite tender on palpation, especially before or during menstruation. Other portions of the colon were relatively free from

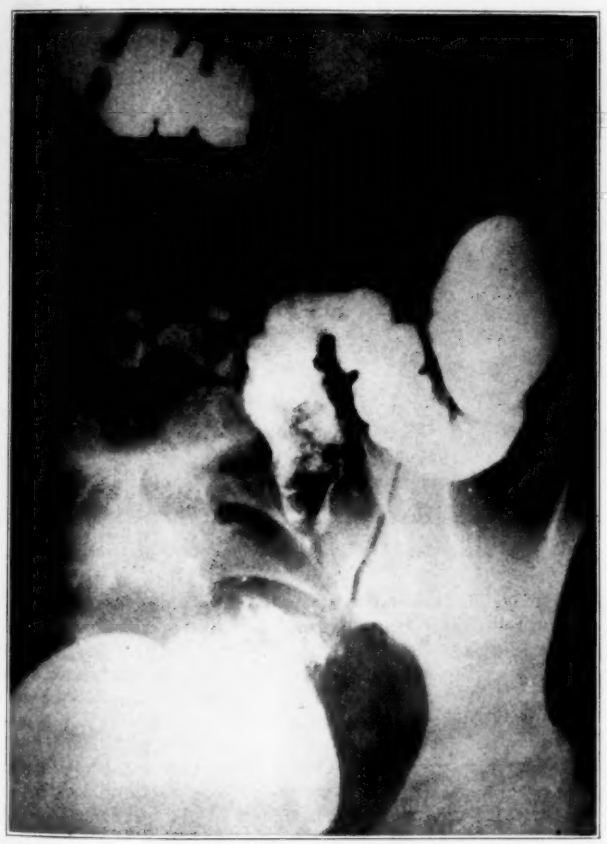

Fig. 3 (W. S., aged 25).—Preoperative barium contrast roentgenogram demonstrating filling defect of sigmoid colon caused by endometriosis.

spasm, irritability or demonstrable disease. The clinical history was important in making the correct diagnosis in less advanced lesions.

## SUMMARY

1. Endometriosis is common in women during their active menstrual life.

2. Endometrial implants on the rectosigmoid occur frequently in patients with pelvic endometriosis: in 40 per cent of 117 patients in the present series and in 15 to 40 per cent of the series found in the medical literature.

Fig. 4 (W. S., aged 25).—Postoperative barium contrast roentgenogram three months after surgical castration, demonstrating complete restoration of lumen of the bowel.

3. An accurate preoperative diagnosis of constricting endometriosis of the rectosigmoid can be made from clinical characteristics and roentgenologic findings by means of barium enemas.

4. The more common clinical characteristics of constricting endometriosis of the rectosigmoid include (1) age range, usually between 25 and 45 years; (2) high incidence of menstrual abnormalities; (3) absolute or relative sterility; (4) long history of bowel symptoms suggesting progressive obstruction with frequent exacerbations at menstruation; (5) absence of cachexia or loss of weight; (6) infrequent gross or occult blood in the stool in the absence of other anorectal disorders; (7) high incidence of associated benign uterine tumors, and (8) demonstration of narrowed lumen of the bowel with intact mucosa when the lesion can be reached with the sigmoidoscope.

5. The roentgenologic findings of constricting endometriosis of the rectosigmoid includes (1) a filling defect approximately 4 to 7 inches; (2) a sharp demarcation of this filling defect similar to carcinoma; (3) little evidence of disorders in other portions of the colon; (4) an essentially intact mucous membrane, and (5) fixation and tenderness to palpation during fluoroscopic examination.

6. Castration without resection of the colon resulted in complete restoration of the lumen of the bowel in patients examined preoperatively and postoperatively by barium enemas.

7. The differential diagnosis of a constricting lesion of the rectosigmoid in a woman during her active menstrual life should include endometriosis as a prominent etiologic possibility.

8. Constricting lesions of the rectosigmoid are of sufficient frequency to warrant careful consideration before extensive resection of the colon or rectum is attempted.

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## SOLITARY DIVERTICULITIS OF THE CECUM

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The right lower quadrant of the abdomen is the site of the most common inflammatory lesions of the peritoneal cavity. Because of the frequency of acute appendicitis and its complications and the frequency of surgical intervention, it is worth while to report 2 cases of a relatively rare condition which is occasionally encountered when the diagnosis of appendicitis has been made.

Thirty-seven cases of solitary diverticulitis of the cecum have been found in the American and British literature. Those cases were excluded in which other diverticula were found either at operation or on subsequent x-ray examination of the colon. In a considerable number of cases (24 of 39) no information was available concerning the presence or absence of other diverticula. However, the essential pathologic process in each case was in a solitary diverticulum that was demonstrated to be acutely inflamed at operation. One of Satterlee's [1] cases, described as an intussusception of the cecum and appendix into a large diverticulum of the cecum, was not included because the essential pathologic condition was not a diverticulitis. Similarly a case observed by Hartzell [2] was not included because other diverticula were present, although the primary pathologic condition was located in an isolated diverticulum of the cecum. The diverticulum was acutely inflamed and was surrounded by an inflammatory mass. When the colon was examined with barium it was found that the opaque medium entered the peritoneal cavity through a perforation in the diverticulum. General peritonitis caused death.

The report of 2 cases follows:

CASE 1.—V. M., a white man aged 34, was diagnosed at the Mason Clinic in August 1918 as having duodenal ulcer. He responded satisfactorily to medical management. There had been a tendency to constipation.

The patient returned in September 1922. On the day previous, after an automobile ride, he noticed a dull, steady abdominal pain, which was worse on the right side. On the day of admission the pain settled definitely in the right lower quadrant. There was no nausea or vomiting. The patient noticed a lump in his right side. There was no history of a previous similar attack.

On examination the pulse rate was 108 and the temperature 99.4 F. There was point tenderness just medial to the right anterior superior spine and a palpable tender mass the size of a hen's egg. The rectal examination was negative. The leukocyte count was 20,800; the differential count showed 90 per cent neutrophils and 10 per cent lymphocytes. Examination of the urine disclosed no abnormality. The serologic reaction of the blood was negative. A diagnosis of appendicitis was made.

At operation there was found generalized peritonitis with free pus. The left side of the cecum was "black and gangrenous." There was a diverticulum containing a fecalith the size of a lemon. The cecum was resected and an anastomosis between the ileum and the ascending colon was made. Recovery was uneventful. A pathologic report was not contained in the record. No subsequent x-ray studies were made.

CASE 2.—*History.*—D. B., a white man aged 59 was first seen at the Mason Clinic in April 1940, when a diagnosis of chronic pulmonary fibrosis was made. Repeated examinations of the sputum for tubercle bacilli were made and were reported as negative.

In May 1941 he was seen at home with a moderately severe respiratory infection. Slight tenderness of the lower part of the abdomen was noted. After being under observation for three days he was admitted to the Virginia Mason Hospital on the fourth day because of an increase in abdominal tenderness. The respiratory infection was subsiding. Moderate constipation and anorexia were present but neither nausea nor vomiting. A history of earlier attacks of pain in the right lower quadrant of the abdomen was not secured. For a number of years, he said, he had had periodic attacks of a dull ache in the epigastrium. These occasionally came on at night and were relieved by the taking of food or sodium bicarbonate. Fluoroscopic and x-ray examination of the stomach and duodenum had been done elsewhere and were reported as negative. These earlier symptoms had subsided spontaneously two years before the present illness came on. The history of the gastrointestinal tract otherwise was negative.

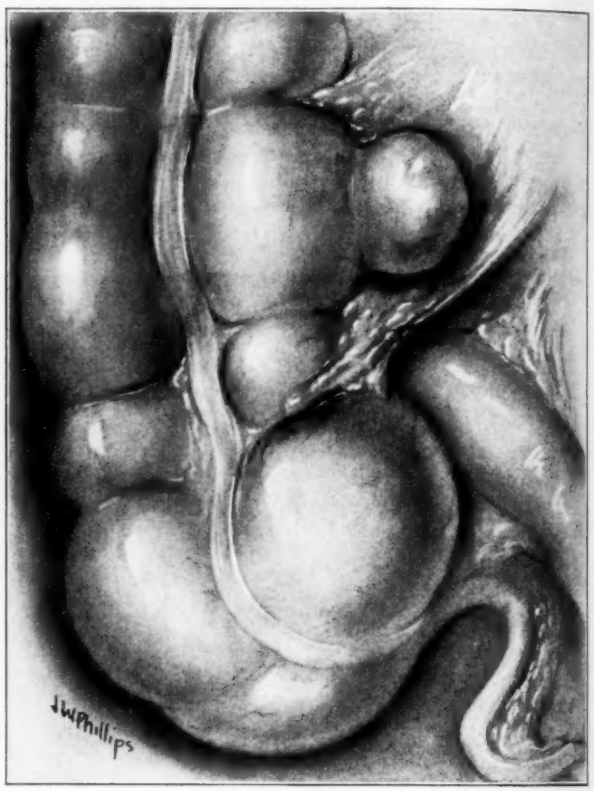


Fig. 1 (case 1).—Solitary diverticulum above ileocecal valve.

*Physical Examination.*—The temperature was 101.4 F. and the pulse rate 108 a minute. Tenderness was present over the lower part of the abdomen, particularly in the midline. There was no spasm nor rigidity. No mass was palpated. Rectal examination was negative. Rales were heard throughout both lung fields, as they had been on all previous examinations during the last year. The leukocyte count was reported as

1. Satterlee, G. R.: Disease Conditions of the Cecum: Etiology, Pathology and Treatment, New York M. J. **100**: 851, 1914.
2. Hartzell, H. V.: Personal communication to the authors.

22,950 per cubic millimeter; 88 per cent were neutrophils and 12 per cent were lymphocytes. A diagnosis of acute appendicitis was made.

At operation the appendix appeared obliterated at the appendicocecal junction. There was periappendicitis of the distal half. A mass in the center of the abdomen proved to be omentum

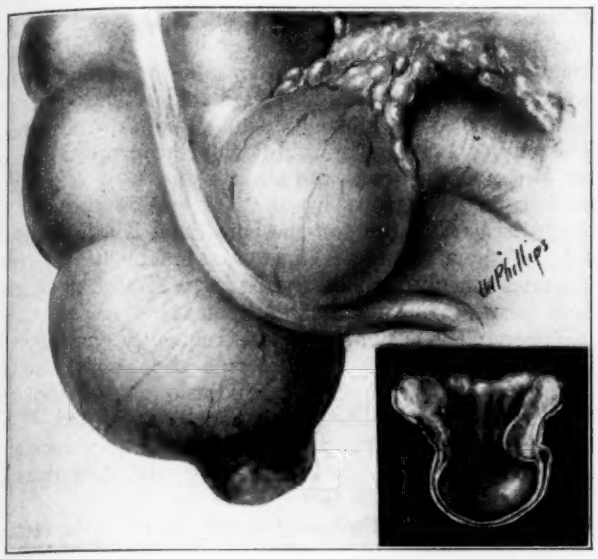

Fig. 2 (case 2).—Solitary diverticulum at base of cecum.

wrapped around the cecum. The omentum was lifted, and an ounce of pus with an odor of colon bacillus was evacuated. This abscess was caused by perforation of the solitary diverticulum of the cecum 2.5 cm. laterally across to the base of the appendix. The diverticulum was 2.5 cm. in diameter. Its serosa was necrotic but intact; it was puffed out like a hammock. The diverticulum was resected and the opening in the cecum closed. The appendix was removed. A small Penrose drain was placed in the lateral gutter and the incision was closed in layers.

The postoperative course was uneventful. A Mantoux test on the fourteenth postoperative day was positive. Fluoroscopic and x-ray examinations of the barium filled colon with stereoscopic air injection films three months postoperatively showed

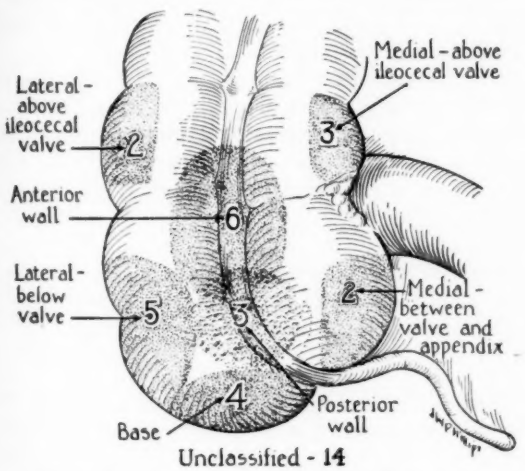


Fig. 3.—Location of solitary diverticula in 39 cases.

a normal cecum with no other diverticula in the cecum or in the remainder of the colon.

*Pathologic Examination.*—Gross: The specimen consisted of a cylindric piece of tissue measuring 2.5 cm. at one end and 2 cm. at the other. The base was 1.5 cm. thick and opened through a 0.5 cm. aperture into a sac having two layers. The layers were discrete in the fixed specimen.

Microscopic: At one end of the section was normal mucosa of the colon. This gradually became involved in an inflammatory process which destroyed the mucosa at the junction with a thin walled structure. This structure was lined on one surface with mucosa showing a definite inflammatory change which extended into the submucosa. A thin layer of circular muscle was present which was approximately one eighth as thick as the muscularis of the normal colon. The other surface consisted of serosa lying next to a zone of intensely inflamed areolar tissue. One atypical giant cell was seen.

The diagnosis was acute and chronic inflammation of a true diverticulum of the colon.

## SUMMARY OF CASES FOUND IN THE AMERICAN AND BRITISH LITERATURE FOR THE PAST TWENTY YEARS

In all, 37 cases were found in the literature, the 2 cases here reported making 39. These have been analyzed from the available data in an effort to find common features. The ages of the patients ranged from 10 to 69 years. There were 2 patients in the second decade, 7 in the third decade, 8 in the fourth, 7 in the fifth, 10 in the sixth and 5 in the seventh. There were 21 females and 18 males. In 18 cases, previous attacks

TABLE 1.—*Preoperative Diagnoses*

| Preoperative Diagnosis | Cases |
|---|---|
| Acute, subacute or chronic appendicitis | 22 |
| Appendical abscess | 5 |
| Cancer or "true tumor" | 3 |
| Stump appendicitis | 1 |
| Abscess of undetermined origin | 1 |
| Diagnosis deferred | 2 |
| Not recorded | 5 |

TABLE 2.—*Types of Operation Performed*

| Type of Operation | Cases |
|---|---|
| Diverticulectomy | 15 |
| Resection of the cecum and/or ascending colon. | 15 (1 death) |
| Inversion of the diverticulum | 3 |
| Cut adhesion | 1 |
| Closed opening | 2 |
| Anastomosis or drainage | 2 |
| Extraperitonealization of abscess | 1 |

The mortality was 1 case out of 39

of pain in the lower part of the abdomen were reported. In 7 cases there was a history of constipation. Constipation was denied in 10 and not mentioned in 22 cases. Vomiting occurred in only 5 cases of the series. In 13 cases it was neither recorded nor denied. The temperatures ranged from 97.4 to 102 F.; in 20 cases the temperature was between 99 and 100 F. The pulse rate ranged from 50 to 140 a minute; the majority of reports gave the rate as between 80 and 89. The leukocyte count ranged from 6,000 to 23,000 per cubic millimeter. A mass was found in 16 cases and the suggestion of a mass in 3 cases. In 7 instances it was stated that there was no mass. The presence or absence of a mass was not recorded in 13 cases. Tenderness in the right lower quadrant was present in 36 cases, absent in 1 case and not reported in 2 cases.

At operation the following conditions were encountered: In 4 cases fluid was present. In 16 cases there was local peritonitis. In 1 case general peritonitis was present. In 3 cases the appendix had been removed previously. The appendix was normal in 22 cases, slightly inflamed in 9 cases and acutely inflamed in 2 cases; its condition was not recorded in 3 cases. In 20

cases a fecalith was found in the diverticulum; in 11 cases the presence or absence of a fecalith was not recorded.

In 3 reports it was mentioned that exploration for other diverticula was negative. In 12 cases x-ray examinations of the colon were negative for diverticula. In 11 cases the diverticula were classified as true diverticula. In 10 cases they were classified as false diverticula. In 18 reports the presence or absence of muscular fibers was not recorded.

In 2 cases there was evidence of local tuberculosis, and 1 patient had active pulmonary tuberculosis at the time of operation but no local manifestations. In 1 of the cases herein reported, one atypical giant cell was noted.

## COMMENT

Diverticula may be classified as either congenital or acquired. Congenital, or true, diverticula consist of all the layers of the bowel wall; acquired diverticula may be subdivided into primary and secondary. Primary acquired diverticula are due to deficiency in the circular muscle of the wall with herniation of the mucosa through the deficiency; secondary diverticula are due to previous operative intervention or adhesions.

Greensfelder and Hiller,[3] in reporting 2 operative and 2 autopsy cases of such diverticula of the cecum, list

TABLE 3.—*Location of the Diverticula*

| Location of Diverticulum | Cases |
|---|---|
| Base of cecum | 4 |
| Medial, above the ileocecal valve | 3 |
| Between the valve and the appendix | 2 |
| Lateral, below the level of the valve | 5 |
| Lateral, above the level of the valve | 2 |
| Anterior wall | 6 |
| Posterior wall | 3 |
| Unclassified | 14 |

the following mechanisms: (1) eversion of the cecal wall between two constricting bands, (2) traction by adhesions, (3) eversion of a weak spot in the cecal wall caused by migration of a purse-string suture into the lumen of the intestine and (4) eversion of the weakened area in the cecal wall resulting from the rupturing into the cecum of an abscess of the appendical stump.

Wilson [4] states that there are three primary factors entering into the formation of a diverticulum: (1) inherent weakness in the wall of the bowel due to age, congenital weakness, obesity or atrophy of the fat along vessels which penetrate the wall, (2) intracolonic pressure and (3) traction on appendices epiploicae, mesentery or omentum with or without adhesions.

The differential diagnosis of solitary diverticulitis of the cecum is almost impossible to make preoperatively. In a majority of the cases in this series a preoperative diagnosis of appendicitis was made. The abdomen was opened in the belief that the condition could be remedied easily by one with a minimum of surgical training. On the discovery that the appendix is normal or not primarily involved (this occurred in 29 of 31 cases), two questions arise: What is the nature of the lesion? and What shall be done about it? In addition to appendicitis there are a number of other lesions of the cecum which require different types of surgical intervention, varying from simple closure to partial colectomy.

The differential diagnosis and choice of procedure at operation are of utmost importance in minimizing the risk to the patient. The presence of a mass (found in 13 of the 23 cases in which such a finding was noted or denied) further complicates the picture.

Aside from appendicitis, cancer is the most frequent lesion of the cecum. In differentiating cancer from diverticulitis the problem is facilitated if one keeps in mind the three types of malignant tumors of the bowel. The first type grows by cauliflower-like projection into the lumen of the bowel and is very slow to metastasize; the second type grows by direct extension through or along the various coats of the bowel and is a little more apt to show glandular metastases; the third type ulcerates rapidly through the bowel wall and, at operation, shows many glandular metastases.

Tuberculosis is the next most frequently encountered lesion of the cecum. As a rule the ileum also is involved. Small tubercles can occasionally be seen on the serosa. The peritoneum is usually thickened. The lymph glands are large and caseous, and adhesions are frequently present. Both ulcerative and hyperplastic forms exist.

Actinomycosis of the bowel usually starts in the cecum or the appendix. The wall may be greatly thickened, and in later stages small abscesses are formed, which may open through sinuses in the abdominal wall, discharging the characteristic sulfur granules.

Nonspecific ulcers of the cecum are encountered with approximately the same frequency as diverticula. They may be single or multiple. It has been pointed out by several authors (Harrison,[5] Cameron,[6] Wilkie[7]) that the usual location is on the medial aspect of the cecum above the ileocecal valve. Of the 23 cases of diverticulitis herein reported in which there was information sufficient to localize the diverticulum, 2 were reported to have the diverticulum in this region. The problem encountered is the same as that in diverticulitis. There should be minimal surgery rather than wide resection. All the complications of peptic ulcer have been seen in ulcers of the cecum: acute and subacute perforation, hemorrhage and obstruction.

Simple inflammatory tumors of the cecum in which there was no definite etiology have been reported by Bryan; [8] Rhodes, in discussing Bryan's cases, adds the report of a case which he terms "carbuncle of the cecum" in which there were multiple abscesses of the cecum and ascending colon.

In 14 cases in this series, resection of the cecum and/or ascending colon was considered advisable, either because of the extent of the lesion or because the lesion was thought to be malignant or tuberculous.

## CONCLUSIONS

Solitary diverticulitis of the cecum cannot be differentiated from appendicitis. The operative differential diagnosis is of utmost importance in determining the type of procedure to be followed. The outlook is favorable for complete recovery.

3. Greensfelder, L. A., and Hiller, R. I.: Cecal Diverticulosis, with Special Reference to Traumatic Diverticula, Surg., Gynec. & Obst. **48**: 786 (June) 1929.

4. Wilson, Frank C.: Diverticulitis of the Cecum, J. M. A. Alabama **1**: 282 (Jan.) 1932.

5. Harrison, Hartwell: Importance of Simple Ulcer of the Right Side of the Colon in Diagnosis of Abdominal Disease, Arch. Surg. **40**: 959 (May) 1940.

6. Cameron, J. R.: Simple Nonspecific Ulcer of the Cecum, Brit. J. Surg. **26**: 526 (Jan.) 1939.

7. Wilkie, David: Simple Ulcer of the Ascending Colon and Its Complications, Surgery **1**: 655 (May) 1937.

8. Bryan, W. A.: Simple Inflammatory Lesions of the Cecum, South. S. Tr. **43**: 320, 1930.

# EFFECT OF PHENOTHIAZINE ON INTESTINAL PARASITES

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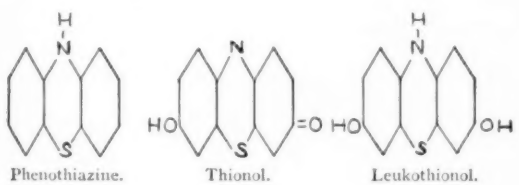
ASHEVILLE, N. C.

Cases of intestinal parasitism have been coming to the attention of the Buncombe County Health Department for a long time. In one group of children whose feces were examined, because of their particularly undernourished appearance, 80 per cent (approximately) had some form of intestinal parasite. The great majority of these children were infected with Ascaris. These children were treated with reasonable success with several different drugs. But the few cases of Oxyuris vermicularis (pinworm) infection which showed up with the feces examination were much more difficult to treat, and at that time no satisfactory treatment was found. In October 1941 the Parke-Davis representative called to my attention the work of Manson-Bahr [1] in London in treating with phenothiazine 9 patients who were infected with pinworms. The Parke-Davis company has furnished me with a supply of phenothiazine (under the trade name of nemazene) for use in treating the patients found infected with pinworms. This paper contains the result of my experience with phenothiazine in the treatment of various parasitic infections.

Phenothiazine [2] is a new preparation which is being used experimentally in human beings at the present time. It is distantly related to sulfanilamide. It is the parent substance of a large number of dyes, one of which is methylene blue. It is being used as an insecticide spray for fruits and vegetables. Phenothiazine has been found of value in the treatment of worm infectations of cattle, sheep, swine and horses, and the control of mosquito larvae in ponds. It has recently been found effective in the treatment of certain cases of urinary tract infections. It is prepared by fusing diphenylamine with sulfur in the presence of iodine as a catalyst. Phenothiazine, thionol and leukothionol (two excretion products) have the following structural formulas respectively:




Phenothiazine. Thionol. Leukothionol.

## METHOD OF DIAGNOSIS—OXYURIS VERMICULARIS

The feces specimen is inadequate for the finding of the ova of the pinworm (also known as threadworm, seat worm, Oxyuris vermicularis and Enterobius vermicularis). The female migrates from the rectum [3] during the early hours of sleep and deposits its eggs in the moist folds of skin as far forward as the scrotum. In the morning the only vestige of the female worm left is a dried carcass. This accounts for the difficulty in getting specimens of live worms.

A number of studies have been made within recent years using some variation of the NIH swab.[4] This is a swab composed of a piece of cellophane attached to a glass rod by a rubber band. In my own study a modification of this swab was found most effective with rural children. This modified swab consists of a piece of cellophane of medium thickness about 1½ inches long and 1 inch wide glued to an ordinary wooden applicator about 4 inches in length. The ordinary 6 cc. test tube, such as is used for taking blood for Wassermann tests, serves as a container. A gummed label and cotton stopper complete the equipment.

The cellophane swab is placed over the index finger and rubbed about the anus. It is preferable to take the specimen in the morning before bathing or going to the toilet. In the laboratory the cellophane is cut off and placed on a microscopic slide with two drops of water, and a cover slip is placed over it. Diagnosis is made by finding the typical ova.

## RESULTS OF SURVEY

Three groups were surveyed. All groups consisted entirely of white people:

1. The children of the first six grades of a rural consolidated school were examined. The school is located at Barnardsville and serves a rural population of 2,881 in Ivy Township, 22 miles northeast of Asheville, N. C. Specimens were obtained from 274 boys and girls ranging in age from 6 to 13 years, with a few children as old as 16 years. The specimens were taken by a physician and nurse between the hours of 10 and 11 a. m. Only 1 specimen was taken on each child. Of the 274 examined 45, or 16 per cent, were found positive. The work of several investigators [5] shows that from 4 to 7 specimens are necessary before a person can be judged to be uninfected with pinworms. Therefore the 16 per cent found must be considered the absolute minimum of pinworm infection in this school group.

2. One hundred and fifteen boys from the National Youth Administration resident center at Newbridge, N. C., were examined. These boys ranged in age from 16 to 24 years. They are a selection of high school graduates from western North Carolina and surrounding area. Of these 115 examinations only 4, or less than 4 per cent, showed the presence of Oxyuris vermicularis.

3. The children at Mountain Orphanage (15 miles west of Asheville, N. C.) were examined. These children sleep in large wards with the beds placed close together. Of 62 children examined by two swabs 24, or 38 per cent, were found to be infected with pinworms.

## FAMILIAL INCIDENCE OF OXYURIS

There were 26 families rechecked carefully with cellophane swab specimens. The cooperation was not entirely satisfactory in the older children of the family. The young adults between the ages of 16 and 25 particularly seemed to be embarrassed and did not cooperate particularly well in giving good specimens. For this reason the familial incidence appears lower than the true incidence. In the family study 96 members were found positive and 46 members negative. In 5

1. Manson-Bahr, Philip: Phenothiazine as an Anthelminthic in Threadworm and Roundworm Infections, Lancet **2**: 808 (Dec. 28) 1940.
2. Phenothiazine, Preliminary Report of the Council on Pharmacy and Chemistry, J. A. M. A. **115**: 1721 (Nov. 16) 1942.
3. Bozicevich, John, and Brady, F. J.: Studies on Oxyuriasis, M. Ann. District of Columbia **7**: 187 (June) 1938.
4. Folan, John P.: The Preparation and Cleaning of the NIH Anal Swab Used in the Diagnosis of Oxyuriasis, Pub. Health Rep. **54**: 1392 (July 28) 1939.
5. Cram, Eloise B., and Readorn, Lucy: Studies on Oxyuriasis, Am. J. Hyg., Sec. D **29**: 17-24 (Jan.) 1939.

families all members were positive. In 7 families only 1 member in each family was negative. At the other extreme, in 5 families only 1 member in each family was found positive. In the latter group of 5 families, cooperation in preparing specimens was so poor that no treatment was attempted.

TABLE 1.—*Frequency of Symptoms*

| Total Number of Patients, 106 | | |
|---|---|---|
| Symptoms | No. of Patients | Percentage |
| 1. Restlessness in sleep | 83 | 78 |
| 2. Poor appetite | 51 | 48 |
| 3. Nightmares | 36 | 33 |
| 4. Itching about rectum | 28 | 26 |
| 5. Nervousness | 17 | 16 |
| 6. Sleepwalking | 14 | 13 |
| 7. Indigestion | 12 | 11 |
| 8. Bed wetting | 5 | 5 |
| 9. No symptoms | 12 | 11 |

## COMMENT

Pinworm infection was thought until recently to be most prevalent in urban areas where crowding is a definite feature. A study was made by Sawitz [6] in which he showed that there was a much higher percentage of infection in children sleeping in wards than in children sleeping in individual rooms. The incidence he found in orphanages ranged from 15 to 96 per cent. This finding suggests that the crowding of sleeping quarters is the factor of importance. Work of Cram and her co-workers [7] makes the same point. Cram found an incidence of 57 per cent among boys of low economic status in Washington, D. C. She also found an incidence of 35 per cent among 628 persons from the same economic group of the general population of Washington. Brown [8] found an incidence of 32 per cent from a similar group of boys at Charlotte, N. C. He also found no infection in a group of 118 University of North Carolina students. Infection rates of from 15 to over 90 per cent have been found in as widely scattered areas as Toronto, Tampa, Manila and Georgia.[9] These have all been white people in the lower economic groups.

It would seem that an infection of 16 per cent of children from the lower economic groups of rural families is consistent with the findings in more urban areas. The homes in the Barnardsville area are predominantly crowded. Several people usually sleep in one room—sometimes the entire family.

Family incidence was studied by Cram.[7] Her results correspond closely to those found in Buncombe County. Clinical observation leads me to believe that family incidence is practically 100 per cent. The inadequacies of even the improved cellophane swab methods of diagnosis make it imperative to consider all members of any household where infection is found to be infected.

6. Sawitz, Willi; D'Antoni, Joseph S.; Rhude, Kenneth, and Lob, Sydney: Studies on the Epidemiology of Oxyuriasis, South. M. J. **33**: 9-13-921 (Sept.) 1940.

7. Cram, Eloise B.: Studies on Oxyuriasis: IX. The Familial Nature of Pinworm Infestation, M. Ann. District of Columbia **10**:39 (Feb.) 1941. Cram, Eloise B.; Jones, Myrna F., and Readorn, Lucy: The Incidence of Pinworms (Enterobius Vermicularis) in Various Population Groups, Rev. de med. trop. y parasitol., bacteriol., clin. y lab. **7**: 4 (Jan.-April) 1941.

8. Brown, H. W.: Sheldon, A. J., and Thurston, T.: The Incidence of Pinworm (Enterobius Vermicularis) Infection in North Carolina, South. M. J. **33**: 922-925 (Sept.) 1940.

9. Miller, Max J.; Choquette, Laurent; Audet, Wilfred; Kelso, R. F., and Guenette, J. A.: Studies on Pinworm Infection: II. Tests with Gentian Violet in the Treatment of Pinworm Infection, Canadian M. A. J. **43**: 455-459 (Nov.) 1940. Kuitunen-Ekbaum, E.: Intestinal Parasites in Children in Toronto, Am. J. Dis. Child. **60**: 518-525 (Sept.) 1940; A Survey of Entozoa in Adults in a Toronto Hospital, Canad. M. A. J. **43**: 451 (Nov.) 1940. Cram, Jones and Readorn.[7]

## SYMPTOMS OF OXYURIS INFECTION

The chief symptoms caused by infection with Oxyuris are (1) restlessness at night, (2) poor appetite, (3) nightmares, (4) itching about the rectum, (5) bedwetting, (6) sleepwalking, (7) nervousness and (8) indigestion. These symptoms are given roughly in the order of their frequency. The patients may vary in their symptom complex from practically no symptoms to all those enumerated. Particularly in the younger children did I find the symptoms worse. Several children were very much underweight, had circles under their eyes and showed moderate degrees of anemia.

Symptoms shown by 106 patients were tabulated to determine the frequency of their occurrence. A few patients exhibited only one of the symptoms while some patients gave a history of almost the entire symptom complex. A striking example of the latter is case 16:

CASE 16.—A white girl aged 8 years was brought to the clinic because of extreme nervousness and loss of appetite. The patient was particularly bothered by insomnia. She jumped frequently in her sleep and cried out as though frightened. Her appetite was poor. She would eat a small breakfast, then carry only two sandwiches to school for lunch. She would seldom eat more than half of one sandwich for lunch. The patient was underweight and pale and had dark circles under her eyes.

She was given 3 Gm. of phenothiazine a day for five days. Within a week after this treatment she had a large breakfast every morning and was not satisfied with less than four sandwiches for her lunch. She gained 12 pounds (5.4 Kg.) within the following three months and her nervousness disappeared. Her sleep has been restful and undisturbed.

## RESULTS OF TREATMENT

The work of Manson-Bahr [1] suggested that 40 Gm. of phenothiazine would be needed to remove Ascaris and pinworms from adult patients. This dose was divided into five daily doses of 8 Gm. each.

In the first series of patients I tried to follow the dosage schedule suggested by Manson-Bahr. For convenience I shall refer to this as schedule 1. Eight adult patients were selected who had both Oxyuris and Ascaris infection. They were given 8 Gm. of phenothiazine a day. Four of the patients completed the treatment and 4 had to reduce the dosage. All the patients complained of nausea. Four patients vomited

TABLE 2.—*Schedule 2*

| | Dosage, Gm. | |
|---|---|---|
| | Per Day | Total |
| Adults | 4 | 20 |
| Children | | |
| 8 to 12 years | 3 | 15 |
| 4 to 8 years | 2 | 10 |
| 2 to 4 years | 1.5 | 7.5 |
| Under 2 years | 1 | 5 |

several times and 2 patients became quite dizzy. Five children were treated with comparable dosages ranging from 4 Gm. a day for a 4 year child to 7 Gm. a day for a child of 12 years. All complained of severe nausea and vomiting.

All of the 12 patients were followed for a minimum of ten weeks, and six cellophane swabs, or more, were obtained from all patients. All swabs were negative and the symptoms of pinworms disappeared promptly after treatment. Five of the patients were seen eight

months after treatment and were still symptom free. The results as to the removal of Ascaris was not very encouraging.

In view of the discouraging results with Ascaris and the constant complaint of nausea and vomiting, no further attempts were made with this large dosage of

TABLE 3.—*Seventy-Five Patients Rechecked*

| | Number of Patients | Percentage |
|---|---|---|
| Cured on first treatment | 56 | 74 |
| Not cured until second treatment | 7 | 9 |
| Not cured by 1 treatment but refused second treatment | 12 | 17 |

40 Gm. (8 Gm. a day for five days). A dosage schedule was worked out (table 2). In all, 89 patients have received phenothiazine according to this schedule. There were 68 who had no toxic symptoms during treatment. Of the 20 who showed some reaction, the only symptom noted by 11 patients was nausea for two or more days. One patient became so nauseated that she could not take the full dose. One patient became dizzy. One patient said the treatment made her left leg and side hurt. Five patients vomited several times between the second and fifth days of treatment. One of the latter four became quite pale. One patient had a very severe toxic reaction to treatment. An abstract of her case history is given:

CASE 84.—A white girl aged 14 had a poor appetite. She was restless in her sleep. She was pale and nervous. Her family had a diet in which there was practically no animal protein. They ate no eggs, milk or meat.

She was given 4 Gm. of phenothiazine a day for five days (total 20 Gm.). On the fourth day of treatment she became nauseated and vomited. On the sixth day she became pale and noticed blood in her urine, and she complained of headache. She vomited daily from the fourth to the ninth day. On the ninth day she was admitted to St. Joseph's Hospital. Physical examination revealed that the mucous membranes were pale, there were no petechiae or jaundice, and the heart was slightly enlarged with pulmonary and aortic systolic soft blowing murmurs transmitted to the axilla. The temperature was 99.6 F. The blood count was 1,450,000 red blood cells, 31,500 white blood cells and hemoglobin 30 per cent. The differential count showed 69 per cent neutrophils with 4 per cent juvenile cells. There was irregularity in size, shape and staining of the red cells. Many nucleated red cells were seen.

The child was given supportive therapy including a small transfusion of 75 cc. of whole blood. She was given vitamin, liver and iron concentrates daily. On the twenty-third day after beginning treatment with phenothiazine, the red blood cell count had risen to 3,500,000 and the white cells reduced to 7,800. The hemoglobin rose to 63 per cent. The urine showed no more red cells after the sixteenth day. She was ambulant and has continued well since.

Two of the patient's sisters had a similar, but milder, reaction. This child's mother has had toxemia of pregnancy twice.

The clinical picture of this case was similar to 1 reported from Queen Elizabeth Hospital, Birmingham, England.[10] The English child died twelve hours after a transfusion. Autopsy revealed a slight jaundice, multiple small hemorrhages in the brain and watery dark rib marrow. The liver, heart and kidney showed no microscopic damage.

## RESULTS

Of the 89 patients treated according to the schedule, 75 were sufficiently cooperative to take recheck specimens. The results are given in table 3. The 14 remaining patients symptomatically were greatly improved but refused to give sufficient recheck specimens to determine the outcome. Most of the 26 patients who refused further treatment or rechecks did so because they were symptomatically cured and did not want to bother about further checks. The exception is the family of the girl who had the severe reaction (case 84).

After these severe reactions occurred, it was decided that a smaller dosage would be preferable if it would produce the desired results. With this in mind, a different schedule was tried with the Mountain Orphanage children (table 4).

The children were watched closely by the matrons, who were instructed to call me if any untoward symptoms developed. No toxic symptoms occurred.

## RESULT OF TREATMENT

All 62 children and the 4 adults at the Mountain Orphanage were given the treatment as outlined under schedule 3. Post-treatment cellophane swabs were taken on the entire group. Four children were found to be positive on this examination. Three were children who had been heavily positive on the first examination, and 1 was a child who was negative on the original examination. There were no toxic symptoms of any sort noted in the entire group.

This schedule of dosage appears to be almost as effective as schedule 2. The largest amount of drug given with this dosage is 12 Gm. The smallest dose of phenothiazine causing serious reactions is 20 Gm. This dosage seems adequate and safe and is recommended for routine treatment. The larger dosage of schedule 2 would probably be more effective provided the patient is in good physical condition and care is taken to watch for possible adverse symptoms.

## COMMENT

The nature of the pinworm infection makes it imperative to treat and cure all members of a household at one time. I have counted the eggs found in 2 female worms and found 9,860 in 1 and 10,240 in the other. Counts by other workers run from 4,600 to 20,000 eggs per female worm.[11] Pinworm eggs are found in the air and dust of homes where an infected person lives.[12] They are found at all layers, even to the molding near the ceiling of the room. Thus a previously uninfected individual may swallow pinworm eggs while other members of the family are being treated.

TABLE 4.—*Schedule 3*

| |
|---|
| Adults and children over 6 years: |
| (a) 1 Gm. a day for 6 days |
| (b) Rest 8 days |
| (c) 1 Gm. a day for 6 days |
| Children under 1 year: 0.25 Gm. a day for the same period |
| Children 1 to 6 years: 0.5 Gm. a day for the same period |

Family W., consisting of 7 children and 2 adults, illustrates what may happen when members are left untreated. All children were found infected with Oxyuris. The mother and father were negative after 4 specimens had been taken on each. The parents were left untreated. The post-treatment swabs on the

10. A Death After Phenothiazine, Lancet **1**: 86 (Jan. 17) 1942.

11. Reardon, Lucy: Studies on Oxyuriasis: XVI. The Number of Eggs Produced by the Pinworm Enterobius Vermicularis and Its Bearing on Infection, Pub. Health Rep. **53**: 978-983 (June 17) 1938.

12. Nolan, M. O., and Reardon, Lucy: Studies on Oxyuriasis: XX. Distribution of Ova of Enterobius Vermicularis in Household Dust, J. Parasitol **25**: 173 (April) 1939.

children were negative at first. Then after three months 2 of the children were positive.

Family T. illustrates a similar situation. A married daughter, known to have pinworms, became ill from other causes and was unable to take treatment at the same time as the rest of the family. After her return from the hospital, other members of the family became reinfected.

Family B. illustrates another situation which must be considered. One very large family living in 3 households consisted of a great-grandmother, 2 sets of grandparents, 11 grandchildren and 1 great-grandchild. All 3 households were heavily infected but only 2 households were treated. The result was that, from constant visiting, the 2 treated households became reinfected.

Sawitz [6] and others have shown that once a pinworm infection has entered a household no amount of cleanliness will remove the infection without medical treatment. The problem of treatment of this intestinal parasite then places a heavy burden on the physician who would treat it and on the drug he uses. He must cure not only his patients but also all of the patient's household contacts as well. Treatment of 1 individual will give remarkable temporary relief but absolutely no permanent cure unless his close family associates also are cured.

Because of the inevitable reinfection of the patient from pinworm eggs about the house, it is desirable to have a drug which can be given conveniently over a comparatively long period of time and one which will be sufficiently effective to obviate frequent retreatment. Phenothiazine given according to schedule 3 answers these requirements at least as effectively as gentian violet and far better than any other drug mentioned in the literature.

### HOOKWORM AND TRICHURIS

Four patients were found to be infected with hookworm. They were treated with phenothiazine as follows: Two adults were given 4 Gm. of phenothiazine a day for five days. All 5 patients were still found infected with Trichuris after the treatment. It would seem that phenothiazine is not sufficiently effective to be worth using in hookworm and trichuris infections.

### ASCARIS

Of the patients found infected with Oxyuris, 26 were also found infected with Ascaris. All these patients were treated with the relatively large dose of phenothiazine shown in schedules 1 and 2. All except 2 of the 26 patients treated passed ascarids in the stool. In most cases the largest number of ascarids were passed between the second and fifth days of treatment, but ascarids continued to be passed up to three weeks following treatment. The largest number passed from any one individual was 46. Even though large numbers of ascarids were at times passed, only 5 patients were completely negative after treatment with phenothiazine. All the ascarids were colored pink through and through.

An interesting case was 10. A white girl aged 3 years took 10 Gm. of phenothiazine between February 15 and February 20. She had no symptoms other than pink urine during the time she was taking the phenothiazine. Three weeks later, on March 8, she passed 1 ascarid. Her bowels became loose and on March 12 and 13 she had a definite diarrhea. On March 11 she broke out with a red papular rash over the entire body. On March 12 she passed 26 ascarids. They were all colored pink from the phenothiazine. The child had no other medication during this entire period. Her feces specimen was still positive for Ascaris on April 18.

Phenothiazine is effective in removing a portion of the ascarids, but a comparatively large dosage must be used. No ascarids were passed by patients treated with the small dosage under schedule 3. A quicker acting drug would certainly be more desirable for the treatment of ascaris infections. I do, however, find a usefulness for phenothiazine for small children who cannot swallow a capsule whole. Phenothiazine will remove ascarids from small children reasonably effectively and with less toxic symptoms than santonin.

### SUMMARY AND CONCLUSIONS

1. A simple modification of the NIH swab for the diagnosis of Oxyuris vermicularis infection consists of a piece of cellophane glued to the end of a wooden applicator. This may be put into a glass test tube for easy transportation.

2. A survey, with a single cellophane swab, was made in the first six grades of a rural elementary school. A minimum infection rate of 16 per cent was found. These children were largely from homes which were crowded and from families in the lower economic levels.

3. A group of high school graduates from the NYA resident center were found to have less than 4 per cent infection with Oxyuris vermicularis.

4. The children at the Mountain Orphanage were found to have an infection rate of 38 per cent with Oxyuris vermicularis.

5. Approximately two thirds of the members of all families in which Oxyuris was found gave swabs positive for Oxyuris. In 5 families all members were positive.

6. The chief symptoms caused by infection with Oxyuris were found to be restlessness at night, poor appetite, nightmares and itching about the rectum. These symptoms are given in the order of their frequency.

7. Treatment for Oxyuris was tried with three different schedules of dosage. Phenothiazine was used in all cases.

(a) Schedule 1, which consisted of a total dose of 40 Gm. of phenothiazine for adults, was found too toxic. It was quite effective in the removal of the oxyuris infection in those patients who were able to take this large dosage.

(b) Schedule 2 consisted of a total dose of 20 Gm. of phenothiazine for adults, which was given over a period of five days. Of 89 patients who received this dose, 79 had either no toxic symptoms or only mild nausea. Two patients in the same family had very severe reactions. They showed anemia, high white cell count, nucleated red cells and blood in the urine. These findings were in addition to severe nausea, vomiting, pallor and headache.

(c) Schedule 3, with a total dose of only 12 Gm. of phenothiazine for adults, was tried. This schedule gave results not quite as good as the higher dosage but still satisfactory results. No toxic symptoms occurred in this group.

8. It is necessary to treat all the members of any family or household where infection is found.

9. Phenothiazine was of no appreciable value in the treatment of hookworm or trichuris infection.

10. Phenothiazine was found of some value in the treatment of ascaris infection, but only in large doses.

# PRETIBIAL FEVER

## AN OBSCURE DISEASE

LIEUTENANT COLONEL WORTH B. DANIELS
MEDICAL CORPS, ARMY OF THE UNITED STATES
AND
CAPTAIN H. ARTHUR GRENNAN
MEDICAL CORPS, ARMY OF THE UNITED STATES

Late in July and early in August 1942 there appeared in the wards of the Station Hospital at Fort Bragg, North Carolina, a group of soldiers who exhibited an unusual febrile illness. It shortly became apparent not only that these men had identical symptoms but that they all came from a few military organizations quartered near one another in a limited area of the reservation. Between July 29 and September 11, 40 such patients with this illness were admitted to the wards. The usual history was one of relatively sudden onset characterized by malaise, mild general aching, lumbar pain, severe frontal headache and postorbital pain. On the first or second day of symptoms mild respiratory manifestations consisting of coryza, sore throat, chest pain and soreness, and cough were complained of by 30 per cent of the patients. The respiratory symptoms were not persistent and were never suggestive of primary respiratory involvement such as is seen in influenza. In about one fourth of the cases nausea and vomiting occurred, rarely accompanied by abdominal pain. Shaking chills or chilliness and fever developed. The fever was consistently spiking and frequently showed two or more peaks each day. Often with the elevations there were recurrent chills. During the periods of temperature elevation there was an extreme accentuation of the frontal and postorbital aching, while during the periods of lower temperature the patients felt

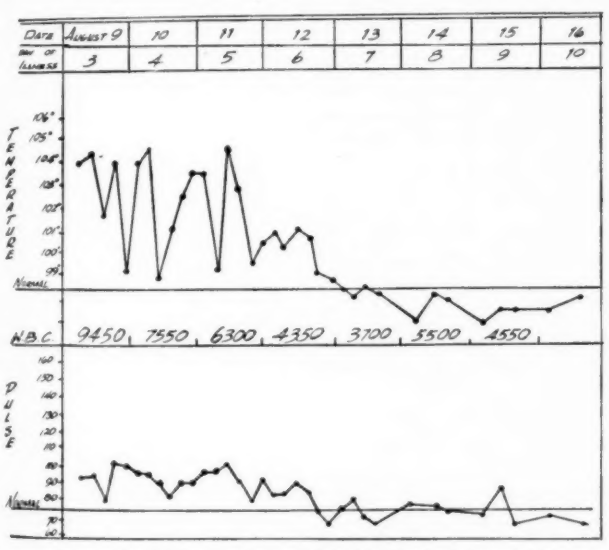



Fig. 1.—Temperature, pulse and leukocyte count in case 2.

relatively well. The fever persisted for from two to eight days but averaged 5.4 days, with maximum elevations varying from 99.8 to 105.6 F. (fig. 1). In 5 cases there was a transient elevation of temperature, sometimes as high as 101.4 F., occurring from two to seven days after the original febrile period. Stiffness of the neck accompanied headache in 3 cases, and in these lumbar puncture was done. All showed normal spinal fluid. There was no noticeable relief of headache following puncture. Adenopathy was not remarkable. A firm spleen was palpable early in the disease in 95 per cent of the cases. Splenomegaly persisted in some for as little as five days, while in others there was noticeable enlargement after two weeks.

Fig. 2.—Cutaneous eruption on the legs in case 20.

The most distinctive feature of the disease was the appearance of an unusual rash on or about the fourth day of illness. In 60 per cent of the cases this was bilaterally symmetrical and limited in distribution to the pretibial areas. In an additional 20 per cent the pretibial areas were the primary site of the rash, while a few lesions were scattered elsewhere. Two patients had splotchy, generalized cutaneous manifestations including the anterior surface of both legs. One had a single lesion on the hand. In 5 cases, otherwise typical, no rash was observed. Individual lesions consisted of an erythematous localized blush of irregular outline with ill defined borders fading into the surrounding skin. These were often from 2 to 5 cm. in their largest diameter, gradually coalescing with adjacent lesions. The lesions were raised, warmer than the surrounding skin and sometimes slightly tender to touch. In some cases the lesions vaguely resembled erythema nodosum. In 2 cases the rash became diffusely distributed over the entire body. In a few cases it appeared urticarial. Following the generalized type there was a residual pigmentation which persisted for about two weeks. None of the lesions were purpuric. In most instances the duration of the cutaneous manifestations was two days but in a few they persisted longer. Figures 2 and 3 illustrate the pretibial and the generalized forms of the rash.

Biopsies of cutaneous lesions were performed in 6 typical cases. They showed diffuse edema and a slight to moderate perivascular infiltration with small round cells and macrophages. It is clear that drugs played no part in the development of this rash. Only 1 patient had received sulfonamide therapy. No other patient received any drug other than acetylsalicylic acid and codeine. Leukopenia was noted sufficiently often to constitute a typical feature. It was present in all except

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Dr. John R. Paul, Norman Topping, U. S. Public Health Service, and Major Cornelius Philip, San. C., U. S. Army, of the Surgeon General's Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, gave permission to use portions of their preliminary report.

5 cases at some time during the acute illness. It developed most commonly between the third and the fifth day of the illness. At the termination of the febrile period the leukocyte count again rose to normal, and in 14 cases there was a slight terminal leukocytosis. The white blood cell count range was from 2,800 to

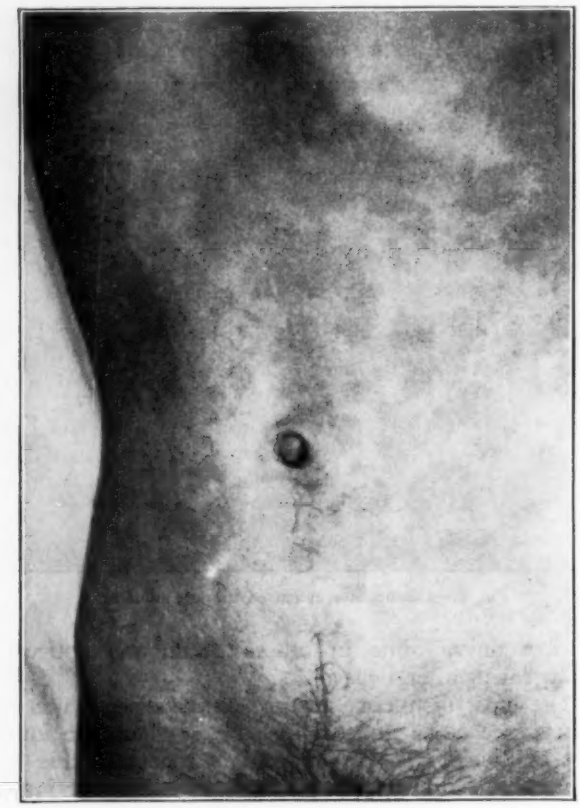

Fig. 3.—Generalized cutaneous eruption in case 9.

14,000 cells per cubic millimeter. Differential counts showed little deviation from normal, although in a few cases a moderate relative lymphocytosis was present. Figure 4 is a graphic representation of composite leukocyte counts.

Blood cultures were done in all cases but showed no growth. Agglutinations for proteus OX 19, melitensis, the typhoid-paratyphoid group and heterophil antibodies were consistently negative. Malarial parasites and the spirillum of relapsing fever were searched for but never found.

At the termination of the fever the patients rapidly returned to their original healthy state. There was no postfebrile depletion or depression. There were no complications. Figure 5 shows the incidence of symptoms.

## REPORT OF CASES

CASE 4.—E. R. D., a white soldier aged 25 of military organization A, admitted to the hospital on Aug. 7, 1942, complained of fever and headache. He had been well until two days previously, when he felt feverish and chilly. Severe frontal headache, postorbital pain and severe backache developed. The next day he felt slightly better but on the day of admission the symptoms were all accentuated. The temperature was 101 F., the pulse rate 90 and the respiratory rate 20; the white blood cell count was 8,150 per cubic millimeter. Nothing unusual was found on physical examination. On the fifth day of the illness the spleen was firm and easily palpable. Over the pretibial surfaces of both legs irregular erythematous lesions were noted. These were faintly tender, warm to touch and very slightly raised. His temperature was swinging in character and ranged from 99.8 to 104.4 F. without a corresponding rapidity of pulse. The leukocyte count on this day was 4,900 per cubic millimeter with 65 per cent polymorphonuclear neutrophils, 31 per cent lymphocytes, 1 per cent basophils and 3 per cent eosinophils. On the seventh day of the illness the rash had entirely disappeared, the temperature was normal and he felt well. On discharge the spleen was still palpable.

CASE 2.—R. G. C., a white soldier aged 21 of military organization A, admitted to the hospital on Aug. 9, 1942 on the third day of his illness, had as initial symptoms frontal headache and pain in the feet and legs which later involved various joints. At the onset there was nausea without vomiting. Shaking chills had occurred on two occasions in the thirty-six hours prior to admission. On examination there were nasal congestion, pharyngitis, signs of generalized bronchitis, a temperature of 104 F., a pulse rate of 92, a respiratory rate of 20 (fig. 1) and a leukocyte count of 9,450 per cubic millimeter. His temperature ranged from 99 to 104.6 F. with very little acceleration of the pulse. Two hours after admission a rash appeared on the trunk, neck and extremities. This consisted of discrete, brilliantly erythematous, slightly raised warm plaques varying in size from 1 to 8 cm. in their largest diameter. The rash was generalized; as in the other cases, the anterior aspects of both legs were involved. The rash remained erythematous for three days, faded gradually and left definite purplish pigmentation, which faded during the succeeding two weeks. The spleen was palpable. On the sixth day the leukocyte count had fallen to 4,350 and on the seventh day to 3,700 per cubic millimeter with no abnormality in the differential count. Convalescence was uneventful.

A summary of 40 cases is shown in table 1.

Toward the latter part of this outbreak a commission consisting of Dr. John R. Paul, Dr. Norman H. Topping and Major Cornelius Philip was assigned by the Surgeon General of the United States Army to investigate the epidemiology and etiology of the disease. Through their courtesy we have been able to use epidemiologic and other data which they have assembled.

## EPIDEMIOLOGY

The organizations from which these soldiers came were all quartered in the northern third of the populated area of the reservation near a small stream and

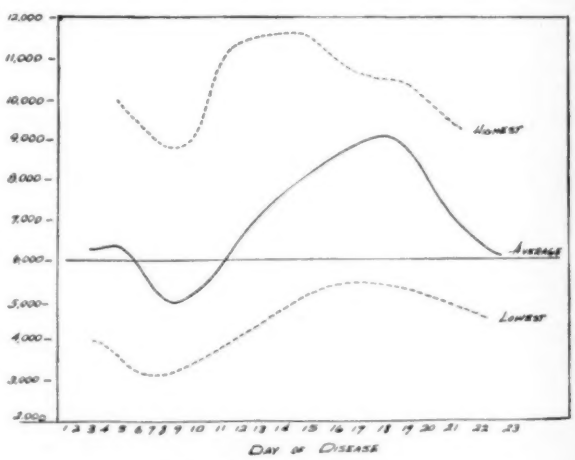


Fig. 4.—Composite leukocyte counts in 40 cases.

its tributaries. The other areas of the post furnished no patients ill with this disease. For this reason local environmental factors were thought to be of etiologic importance. There was no single locality off the reservation to which all these men went during the month previous to illness. They had no common meeting place. Some of the men had done no swimming, while

TABLE 1.—*Summary of Forty Cases*

| Patient | Unit | Date of Onset | Symptoms | Rash | | | | | Leukocyte Count, Lowest and Highest | Spleen | Maximal Fever | Days of Fever |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Day of Appearance | Day of Disappearance | Pretibial Only | Pretibial and Few Scattered Lesions | Generalized | | | | |
| 1. A. W. F. | D | 7/29 | Fainted, fever, malaise, backache, frontal and postorbital aching, chills | 8/1 | 8/5 | Yes | .... | .... | 4,450 to 8,900 | + | 104.8 | 7 |
| 2. R. G. C. | A | 8/5 | Chills, frontal and postorbital aching, chest pain, nausea, backache, joint pains | 8/9 | 8/14 | .... | .... | Yes | 3,700 to 9,950 | + | 104.6 | 8 |
| 3. C. A. B. | B | 8/5 | Chest pain, cold and sore throat, generalized aching, cough, chill, headache, lumbar pain | 8/10 | 8/12 | .... | Yes | .... | 5,250 to 10,100 | + | 104.4 | 7 |
| 4. E. R. D. | B | 8/5 | Frontal headache, chills, fever, cough, backache | 8/9 | 8/12 | Yes | .... | .... | 4,900 to 12,200 | + | 104.4 | 5 |
| 5. J. H. | C | 8/6 | General aching, chills, fever, cough, frontal headache, retro-orbital pain | No rash | | .... | .... | .... | 4,650 to 9,550 | + | 104.2 | 6 |
| 6. L. T. W. | H | 8/7 | Chills, fever, nausea, slight chest pain, generalized aching, dizziness, anorexia, frontal headache and retro-orbital pain | 8/11 | 8/17 | Yes | .... | .... | 4,100 to 8,050 | + | 104 | 6 |
| 7. M. A. F. | B | 8/8 | General aching, chills, malaise, chest soreness, slight cough, frontal headache, retro-orbital pain | 8/11 | 8/15 | Yes | .... | .... | 5,600 to 10,400 | + | 104 | 5 |
| 8. F. W. G. | B | 8/8 | Frontal and occipital headache, chills, nausea, vomiting, backache, malaise | 8/10 | 8/15 | .... | Yes | .... | 3,900 to 11,650 | + | 103.5 | 5 |
| 9. J. V. | B | 8/8 | Chills, fever, malaise, frontal headache, dizziness, generalized aching, lumbar pain | 8/13 | 8/16 | .... | .... | Yes | 4,700 to 9,900 | + | 105 | 7 |
| 10. I. H. F. | A | 8/9 | General aching, frontal headache, retro-orbital pain, vomiting, chills and fever | 8/10 | 8/12 | .... | Yes | .... | 3,000 to 10,700 | + | 100.8 | 2 |
| 11. G. H. C. | B | 8/9 | Chills, fever, cough, generalized aching, backache, frontal headache and retro-orbital pain | 8/12 | 8/14 | Yes | .... | .... | 3,650 to 8,800 | + | 104 | 3 |
| 12. W. P. H. | D | 8/9 | Frontal headache, retro-orbital pain, malaise, generalized aching, fever, dizziness | 8/13 | 8/15 | Yes | .... | .... | 4,600 to 10,250 | + | 104.3 | 6 |
| 13. E. R. H. | B | 8/10 | Head cold, frontal headache, cough, generalized aching, lumbar pain, nausea, fever | 8/12 | .... | Yes | .... | .... | 4,150 to 10,200 | + | 104.2 | 4 |
| 14. M. F. D. | B | 8/11 | Sore throat, slight cough, fever, frontal headache, retro-orbital pain, chilliness and aching | 8/18 | 8/20 | Yes | .... | .... | 4,850 to 10,400 | + | 105 | 5 |
| 15. R. H. L. | I | 8/19 | Grip, fever, frontal headache, malaise, general aching, chills, vomiting and backache | 8/22 | .... | Yes | .... | .... | 4,400 to 9,500 | + | 105 | 6 |
| 16. S. E. T. | A | 8/19 | General aching, chills, slight sore throat, frontal headache, backache | No rash | | .... | .... | .... | 4,300 to 10,950 | + | 104 | 5 |
| 17. J. E. W. | A | 8/20 | Frontal headache, malaise, fever, generalized aching, backache | No rash | | .... | .... | .... | 4,200 to 10,000 | + | 104 | 4 |
| 18. M. W. S. | F | 8/21 | Frontal headache, retro-orbital pain, muscular aching, generalized, chills, fever, photophobia | 8/26 | 8/28 | .... | Yes | .... | 5,850 to 7,450 | + | 104.2 | 5 |
| 19. A. L. V. | A | 8/21 | Cough, fever, sore throat, generalized aching, backache, frontal headache | 8/27 | 9/5 | Yes | .... | .... | 7,300 to 11,700 | + | 102 | 5 |
| 20. W. L. B. | A | 8/22 | Frontal headache, chills, fever, generalized aching, lumbar pain | 8/24 | 9/5 | Yes | .... | .... | 5,000 to 9,000 | + | 104 | 8 |
| 21. R. C. S. | A | 8/22 | Frontal headache, general aching, chills, moderate cough, slight chest pain, nausea and vomiting, malaise | No rash | | .... | .... | .... | 5,000 to 9,800 | + | 103.5 | 5 |
| 22. H. A. M. | A | 8/22 | Malaise, severe chill, fever, general aching, headache | 8/26 | 8/31 | Yes | .... | .... | 7,000 to 9,950 | + | 102.6 | 4 |
| 23. R. F. B. | A | 8/23 | Frontal headache, retro-orbital pain, malaise, weakness, chills, cough, low backache, general aching, anorexia | 8/29 | 9/2 | .... | Yes | .... | 4,400 to 9,100 | + | 104.3 | 6 |
| 24. C. P. | C | 8/23 | Malaise, generalized aching, fever, head colds, frontal headache, dizziness, anorexia | 8/29 | 8/31 | Yes | .... | .... | 5,450 to 9,150 | + | 104.4 | 4 |
| 25. J. B. A. | A | 8/24 | Generalized aching, severe lumbar pain, fever and chills, chest pain, frontal headache, nausea | 8/27 | 9/5 | Yes | .... | .... | 2,800 to 8,100 | — | 102.1 | 8 |
| 26. P. H. | C | 8/24 | Generalized pains, chills, fever, frontal headache, vomiting, backache | 8/28 | 9/5 | Yes | .... | .... | 5,450 to 14,800 | ? | 105.5 | 6 |
| 27. D. C. L. | A | 8/24 | Postorbital headache, malaise, chest pain, backache, fever, cough, mild pharyngitis, stiff neck | 8/27 | 9/3 | Yes | .... | .... | 5,750 to 12,400 | + | 104 | 8 |
| 28. O. K. B. | A | 8/26 | Frontal headache, retro-orbital pain, severe lumbar backache, shaking chills, cough, malaise, fever, mild aching of arms and legs | 8/29 | 9/5 | Yes | .... | .... | 4,550 to 12,800 | + | 104 | 5 |
| 29. C. J. L. | B | 8/27 | Frontal headache, heavy feeling in chest, dizziness, vomiting, backache, fever | 8/31 | 9/5 | .... | Yes | .... | 2,600 to 7,250 | + | 105.4 | 6 |
| 30. B. B. | A | 8/27 | Frontal headache, cough, fever, sore throat, generalized aching, backache | 8/31 | 9/4 | Yes | .... | .... | 7,850 to 12,500 | + | 103.2 | 4 |
| 31. M. C. | C | 8/27 | Frontal headache, fever, malaise, shaking chills, nasal discharge, backache, general aching | 9/1 | 9/4 | Yes | .... | .... | 5,050 to 8,350 | + | 102.8 | 4 |
| 32. W. E. F. | E | 8/28 | Malaise, frontal headache, chills, fever, head cold, backache | 9/1 | 9/4 | Yes | .... | .... | 5,200 to 8,500 | + | 104.1 | 7 |
| 33. J. E. M. C. | A | 8/28 | Muscular aching, chilliness, fever, malaise, nausea and vomiting, sore throat, chest pain, photophobia, frontal headache | 8/30 | 9/5 | .... | Yes | .... | 4,000 to 6,550 | + | 105.5 | 5 |
| 34. R. J. G. | G | 8/29 | Occipital and frontal headache, chilliness, fever, malaise, anorexia, head cold, backache | 9/2 | 9/5 | Yes | .... | .... | 3,800 to 4,500 | + | 104.2 | 5 |
| 35. E. J. H. | C | 8/29 | Frontal headache, malaise, anorexia, nausea, backache, fever, fainted | 9/1 | 9/5 | Yes | .... | .... | 4,550 to 10,100 | + | 104.4 | 7 |
| 36. C. J. M. | B | 9/1 | Frontal headache, nausea, chilliness, fever, malaise, dizziness and backache | 9/4 | 9/8 | Yes | .... | .... | 6,300 to 6,750 | + | 103.4 | 5 |
| 37. J. D. G. | A | 9/6 | Frontal headache, retro-orbital pain, fever, malaise, anorexia, nausea, lumbar aching, dizziness | .... | .... | Yes | .... | .... | 5,250 to 6,850 | + | 102.6 | 4 |
| 38. A. J. D. | A | 9/7 | Frontal headache, generalized aching, malaise, anorexia, nausea and vomiting, lumbar pain, fever | 9/9 | 9/11 | Yes | .... | .... | 6,200 to 8,500 | + | 99.8 | 4 |
| 39. M. | A | 9/11 | Gradual onset, frontal headache, retro-orbital pain, generalized muscular aching, lumbar aching, chills, fever and malaise | 9/13 | 9/16 | .... | Yes | .... | 5,300 to 6,900 | + | 104.8 | 5 |
| 40. J. J. S. | B | 9/11 | Frontal headache, retro-orbital pain, chills, malaise, anorexia, cough, conjunctival injection, fever, backache | .... | 9/14 | .... | Yes | .... | 4,700 to 8,500 | + | 105 | 5 |

others swam in several different ponds. There was no common swimming place. Several men had gone on maneuvers in Chesapeake Bay, others on the coast of North Carolina, while a large number had not left the post area. We have been unable to calculate the exact incubation period. Five men developed their

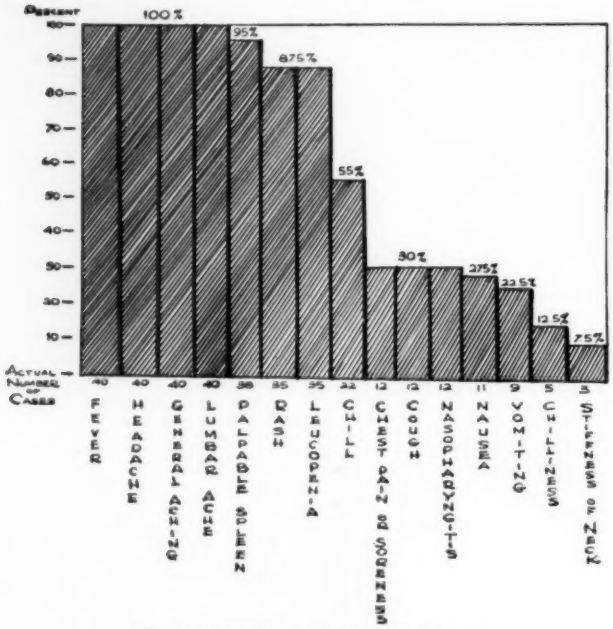


Fig. 5.—Incidence of findings in 40 cases.

illness away from the post. Several became ill a few days after returning to the post following ten days on maneuvers. Table 2 shows the onset of illness in 10 patients who were together on maneuvers between August 10 and August 21.

These men returned on August 21; hence 2 developed their disease away from the post, 2 on the day of return and 6 within three days after their return. If the disease is not spread by human contact it seems reasonable to assume that the incubation period is approximately ten to fifteen days or longer. One man left for his home in Pennsylvania on July 27. On August 5 he became ill with fever and headache. His local physician made excellent observations of this soldier's illness. From his records there can be little doubt that he had "pretibial fever." In this case an incubation period of ten or more days is again suggested.

Figure 6 shows the course of the epidemic. Each rectangle represents one case.

The incidence by organization is as follows: organization A 17 cases, B 10, C 5, D 3, E 1, F 1, G 1, H 1 and I 1. Because of the high incidence in organization B during the early period of the epidemic, the dispensary records of this outfit were later examined. It was found that during this period there was a decided increase in the number of cases diagnosed as "influenza," "nasopharyngitis" and "fever of unexplained origin." Of 33 of these cases hospitalized, 9 were diagnosed "pretibial fever" after the rash appeared. In others the rash was either absent or not observed, and various diagnoses were made. It is probable that some of these were examples of this disease.

Factors responsible for the outbreak have not been determined. The commission and the medical inspector of the post made a search for insect vectors that might be suspected. Sand flies, biting midges and black flies were not found. Bedbugs, stable flies, chiggers, ticks and horseflies were found but for various reasons were considered unlikely vectors.

During the early period of this outbreak the mosquito population on the post was very low, not only because of good control but because of a continued period of low rainfall. Because of the sandy soil in this area, absorption is rapid and standing water is unusual. Various members of the Culex species were found. The most frequent of these was Culex quinquefasciatus. This mosquito has been disproved as a carrier of dengue. No representative of the dengue vector, Aedes aegypti, was found, and there are only a few records of this species being taken during the entire season by the mosquito control officer. Aedes atlanticus, Aedes canadensis and Aedes vexans were found. Their presence is of doubtful importance.

### ETIOLOGY

The cause of this disease remains obscure. Extensive studies by the commission are in progress in an attempt to establish the etiology and mode of transmission. Blood and nasopharyngeal washings have been inoculated into rhesus, green African and mona monkeys. A variety of small laboratory animals including guinea pigs, rabbits, mice and rats have also been inoculated with these materials. The yolk sacs of fertile eggs have been inoculated. Emulsions of the stable fly (Stomoxys calcitrans) have been inoculated into fertile eggs. Two lots of A. aegypti mosquitoes were fed on 2 men during the early phase of their illness. An attempt will be made to transmit this disease by these mosquitoes to human volunteers.

### DIFFERENTIAL DIAGNOSIS

A number of different disease entities were considered as possible diagnoses in these cases. In the early cases influenza was suspected, but the transient character and mildness of the respiratory symptoms, persistence of fever, presence of a firm palpable spleen and the unusual rash eliminated this possibility. Endemic typhus seems excluded by the short duration of the illness, the entirely different type of rash and consistently negative Weil-Felix reactions with OX 19 at different periods of the illness. Rocky Mountain spotted fever can be similarly dismissed. In no cases did adenopathy, the characteristic blood changes or the positive heterophil antibodies usually demonstrated in infectious mononucleosis develop. The duration of the disease, negative blood and stool cultures and negative

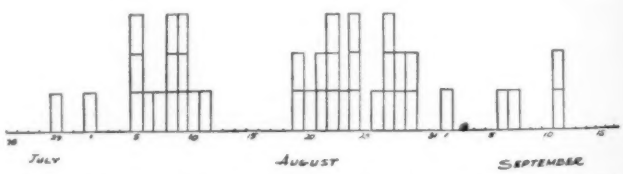


Fig. 6.—Course of the epidemic on a basis of the date of onset. Each rectangle represents 1 case.

agglutination reactions eliminate the typhoid-paratyphoid group. The parasites of malaria and relapsing fever were sought but not found in any case. Dengue was at first thought to be the probable diagnosis. However, as new cases were observed certain prominent features of that disease were conspicuously absent. No patient had a "camel back" type of fever curve or any postfebrile depletion or depression. The usual vector

of dengue, A. aegypti, was not found in the vicinity. It would be unusual for an outbreak of dengue to be limited to such a small group. Its rapid spread to a large portion of the population would have been expected. The type and distribution of the rash is not similar to that seen in dengue. Other described denguelike diseases such as pappataci fever, five day fever of Panama and various similar entities were considered. However, the clinical features of pretibial fever showed definite dissimilarity to these in one or more important respects. Search of the available literature revealed no description of a clinical entity into which this group of cases would fit.

An outbreak of what may be the same disease was observed in August 1940 in Wrens, Ga., by Bowdoin.[1] Dr. Bowdoin [2] writes in part as follows: "Apparently about 35 cases occurred. All patients had a sudden onset within twenty-four hours, complaining of severe frontal headache. A number of them complained of soreness behind the eyes. Some two thirds of the patients complained of backache, and about the same number of pains in the legs. Approximately one third of these patients complained of pains in the joints. Some two thirds of the patients complained of nausea, and some few of them vomited. A fleeting type of rash was seen in 6 or 7 cases, which occurred for the most part on the anterior aspects of the legs. One man is known to have had the rash also on his abdomen and chest. The rash lasted from twenty-four to forty-eight hours. All cases were characterized by very slow pulse, with a range of 55 to 90, varying with temperature range, which was from 100.6 to 104.5 F. All had characteristic dull facies with slight to moderate injection of the conjunctivas. The course was five to ten days with 80 per cent of them having a normal temperature on the seventh day and out of bed on the eighth." A laboratory technician who had done some of the stool cultures is reported to have developed the disease.

TABLE 2.—*Onset of Illness in Ten Cases*

| Day of Leaving Fort Bragg | Date of Initial Symptoms | | | | | | |
|---|---|---|---|---|---|---|---|
| August 10 | 19th | 20th | 21st | 22d | 23d | 24th | 25th |
| Number of cases | 1 | 1 | 2 | 2 | 1 | 3 | 0 |

### SUMMARY

An outbreak occurred of an unusual febrile illness of approximately five days' duration characterized by minimal respiratory manifestations, frontal, postorbital and lumbar aching, leukopenia, palpable spleen and an erythematous rash over the pretibial regions.

Forty such cases occurred among soldiers in a localized area of a military reservation during the months of July, August and September 1942.

The etiology and mode of transmission are unknown. It is hoped that investigations now under way will throw some light on this problem.

ADDENDUM.—Since this paper was submitted for publication, the commission assigned by the Surgeon General of the Army to study the etiology and mode of transmission of this disease has completed its studies. "Clinical material in the form of blood, nasal washings and urine from patients, 'engorged' mosquitoes and locally collected flies have been tested in the various laboratories available to members of the group assigned to study this disease." These materials were obtained from 5 patients between the second and fourth day of illness with this disease. Human beings, rhesus and green African monkeys, 1 mona monkey, 1 chimpanzee, incubating hens' eggs, guinea pigs, rats, mice and hamsters were inoculated. "All tests on this material proved negative as far as isolating or determining the nature of the infectious agent responsible for this disease was concerned."

Station Hospital, Fort Bragg, North Carolina.

1. Bowdoin, C. D.: A New Disease Entity (?), J. M. A. Georgia **31:** 437-438 (Dec.) 1942.
2. Bowdoin, C. D., Public Health Department of Georgia: Personal communication to the authors.

## SYPHILIS IN THE UNITED STATES PRIMARILY A NEGRO PROBLEM

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The results of the serologic blood tests for syphilis that were secured from the first two million reports [1] of selectees for army service in 1940 to 1942 provided an excellent cross section of the prevalence of syphilis in the United States and changed many of our preconceived ideas concerning the epidemiology of the disease in this country.

Syphilis has been called an urban disease, a disease of large cities and seaports, but this is not true in the United States. The urban rate in these men was 4.6 per cent while the rural rate was 4.4 per cent.

Furthermore, syphilis is not a disease of seaports, nor does it have an unduly high prevalence in large cities. The largest cities, such as New York, Chicago, Boston and San Francisco, all have rates of less than 2.5 per cent, whereas the rate for the nation as a whole was 4.5 per cent. Industrial areas do not suffer to an unusual degree. Rhode Island and Connecticut, the two most completely industrialized states in the Union, have rates of 1.1 and 1.2 per cent respectively.

The extraordinary fact brought out by these data is the high prevalence of syphilis in the Negro. This rate permeates overwhelmingly all the other data. In all parts of the United States the rate in Negro men is at least ten times higher than that in white men.

The men examined for service were from 21 to 35 years of age. Table 1 illustrates the high incidence in the Negro and also the increasing prevalence with age in both the white and the Negro.

The geographic distribution of the disease bears a direct relationship to the distribution of the Negro population of the nation. States with a large proportion of Negroes have highest syphilis rates.[2] In each of the forty large cities it will be found invariably that the syphilis rate is in direct proportion to the Negro population.

Furthermore, those states having the highest syphilis rates in Negroes concomitantly have a higher than average syphilis rate in white men.

Table 2 records the five states with the highest syphilis rates in Negroes. In every one of these states the rates in the young white men are above the mean, 2.3 per cent, for the white men of the country as a whole. On the other hand, states that have lowest syphilis rates in the white men also have lower than average rates in the Negro population. This is well illustrated by table 3, which gives the list of five states with the lowest rates in white men. It will be noted

From the Department of Public Health and Preventive Medicine, Cornell University Medical College.

1. Vonderlehr, R. H., and Usilton, Lida J.: Syphilis Among Men of Draft Age in the United States, J. A. M. A. **120:** 1369 (Dec. 26) 1942.
2. The two exceptions are Arizona and New Mexico, where the Indian and Mexican population changes the situation slightly.

that in every instance the rate for Negro men is much lower in these states than the mean, 27.2 per cent, for Negro men the country over.

These data are highly significant and to some degree encouraging. They show the blight that is cast on an area where syphilis is not controlled in the Negro.

TABLE 1.—*Positive Serologic Tests for Syphilis*

| Age Group | White Men | Negro Men |
|---|---|---|
| 21-25 years | 1.0% | 19.0% |
| 26-30 years | 2.1% | 29.4% |
| 31-35 years | 3.9% | 35.7% |
| Total for all ages | 1.7% | 25.2% |

Neglect not only affects the Negroes but increases the rates in the white population as well.

The data indicate also that syphilis may be brought under some degree of control in the Negro as well as in the white. In Massachusetts and Rhode Island, for example, each with rates of 0.9 per cent for white men, one finds that the rates in the Negro population of young adult males are less than 12 per cent.

It was noted that the data show syphilis to be just as common in rural areas as in urban communities. These crude data do not tell the true story. The high prevalence of syphilis among rural Negroes distorts the picture. For example, Iowa and South Carolina are truly rural states: both have populations of about two million, with no large cities. But Iowa selectees had a syphilis rate of 1.7 per cent, those from South Carolina 14.5 per cent. The reason for this is that Iowa has a Negro population of 0.7 per cent and South Carolina one of 43 per cent.

Thus the syphilis problem in the United States at the present time centers in the high prevalence of the disease in the Negro. This is true of all parts of the nation but is particularly true in those cities and states with preponderantly large Negro populations. All comparisons that are made concerning syphilis, comparisons of one city with another or one state with another or comparisons that are made of the United States with other nations, must take into account this high prevalence of syphilis in the Negro and proper statistical correction made on a race population basis.

For example, comparisons of syphilis prevalence in the United States with the Scandinavian countries, with Great Britain or with other European nations are not

TABLE 2.—*Five States with Highest Syphilis Prevalence in Negro Men as Indicated by Serologic Tests*

| State | White Men | Negro Men |
|---|---|---|
| 1. Florida | 5.3% | 40.6% |
| 2. Texas | 5.3% | 34.3% |
| 3. Georgia | 3.9% | 32.8% |
| 4. Maryland | 2.8% | 32.2% |
| 5. Mississippi | 3.5% | 32.1% |

valid unless the data that are presented are truly comparable. When so interpreted it becomes clear that, in our white population, we have a syphilis rate that compares favorably with any nation in the world.

These data show that most of the popular propaganda that has been used in promoting syphilis control in the United States has been highly misleading. "One person in ten will have syphilis" is a popular saying but it is untrue. The incidence of syphilis among white men in the greater part of the nation is low and is limited for the most part, in the white race, to the lowest classes of society. Among the whites syphilis has become, in the great majority of cases, a disease of the ignorant, the careless, the criminal and the social outcast. It is truly a social disease.

From the point of view of the public health administrator, the issue is clean cut: he must attack the disease vigorously at the point of greatest prevalence. Since syphilis is more than ten times as prevalent in Negroes as in white persons, the administrator must make his plans to put at least ten times as much emphasis on control of the disease where it really exists in serious proportions and bend every effort toward control of the disease in the Negroes of his community. These efforts will result in a lower prevalence of the disease in the white people of the community as well.

There has been a tendency in official health circles to gloss over or to ignore the high prevalence of syphilis in the Negro. We now realize that this policy has been a short sighted one. The epidemiologic facts are before us. There is no gainsaying their truth or minimizing their importance. The sooner that this truth is

TABLE 3.—*Five States with Lowest Syphilis Prevalence in White Men as Indicated by Serologic Tests* *

| State | White Men | Negro Men |
|---|---|---|
| 1. Wisconsin | 0.6% | 15.7% |
| 2. Minnesota | 0.8% | 14.2% |
| 3. Massachusetts | 0.9% | 11.6% |
| 4. Connecticut | 0.9% | 20.7% |
| 5. Rhode Island | 0.9% | 9.2% |

* New Hampshire 0.6 per cent, North Dakota 0.7 per cent, Utah 0.7 per cent and South Dakota 0.9 per cent had very low rates in the white men, but the number of Negroes in these states is too few for valid comparison.

recognized and appropriate steps are taken to control the existing situation, the better it will be for the Negro race and for the public health of the nation as a whole.

1300 York Avenue.

**Photosynthesis.** — Since sunlight furnishes the energy required for the synthesis of carbohydrates, this process is known as photosynthesis. Other factors involved are chlorophyll and numerous plant enzymes. Since oxygen is given off and energy is stored, photosynthesis is a reducing and endothermic (heat requiring) process. Much time has been spent by numerous investigators to determine the series of chemical changes involved in photosynthesis. Because of the general occurrence of free glucose, together with the fact that it constitutes an integral part of plant disaccharides and polysaccharides, this sugar has been assumed by many to be the first carbohydrate to make its appearance in the photosynthetic process. The validity of such an assumption now appears doubtful in the light of studies in which radioactive carbon, as carbon dioxide, has been furnished green plants for use in photosynthesis. These studies indicate that a large molecule is the first product of photosynthesis and suggest that, in some plants at least, starch may be the precursor of simpler carbohydrates such as glucose and sucrose, rather than a product resulting from condensation of numerous molecules of simple sugar.—Peterson, William H.; Skinner, John T., and Strong, Frank M.: Elements of Food Biochemistry, New York, Prentice-Hall, Inc., 1943.

# Clinical Notes, Suggestions and New Instruments

## AN UNUSUAL COMPLICATION OF THE INTRASPINAL USE OF IODIZED OIL

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Iodized poppy seed oil has been injected intraspinally in thousands of instances for the localization of intraspinal lesions. Apart from obvious disadvantages in some medicolegal situations and mild transitory symptoms for a few hours to a few days immediately after its injection in a small percentage of the cases, its use has been remarkably free from any untoward results. In our experience, the intraspinal use of iodized oil has been so innocuous that one of us (P. C. B.) has repeatedly expressed the opinion that its use was not associated with any permanent undesirable effects and that in those few instances in the literature in which the development of symptoms was attributed to the use of iodized oil the case against the oil had by no means been established. Furthermore, the study made by Marcovich, Walker and Jessico[1] at the University of Chicago while the Division of Neurology and Neurological Surgery there was under the direction of one of us (P. C. B.) substantiated that opinion.

Accordingly, when the present case came under our observation and when the operation and postoperative course seemed definitely to establish the relationship of the iodized poppy seed oil to the development of symptoms of dysfunction of the spinal cord, we thought it necessary to record the case in detail.

### REPORT OF CASE

*History.*—F. F., an American man aged 36, married, a grocery clerk, was referred to the Neuropsychiatric Institute at the University of Illinois by Dr. E. L. Compere of Chicago because of weakness, stiffness and numbness of both lower extremities. Past and family histories revealed nothing of note. His present illness began some time early in 1935. At that time, the patient noted the onset of pain in the lower part of the back which was aggravated by strenuous exercise. As time went on he began to notice an occasional pain radiating down into both hips and the posterolateral aspect of both thighs and both legs. The pain was not aggravated by coughing or sneezing. He remembers neither numbness nor muscular weakness. The low back pain finally became so severe that he sought aid at a medical clinic. There spondylolisthesis was discovered and, in April 1937, a spinal fusion was performed at the fourth and fifth lumbar and the first sacral vertebrae.

After this operation the patient felt quite well. However, by the beginning of 1938 he began to have severe pain in the left hip radiating down the left thigh posteriorly. Since the pain continued, he was examined in the neurologic service of the same clinic in March 1938. There were no neurologic abnormalities at that time. Iodized oil was injected intraspinally by the lumbar route and the patient examined on the tilting fluoroscopic table. At this examination no obstruction or filling defect of the spinal canal was seen, but two large globules of oil became caught and remained at the level of the eighth thoracic vertebra. These are clearly seen in roentgenograms made at that time. Nothing further was done. There was gradual improvement in the patient's symptoms, and by the end of 1938 he was almost entirely well and able to resume work as a grocery clerk.

About six months before admission to the Illinois Neuropsychiatric Institute on Feb. 23, 1942 the patient began to notice that both his lower extremities were becoming weak and stiff. About four months before admission the weakness and stiffness had progressed to such an extent that it became difficult for him to get about without using the walls and furniture for support. About this time he noticed that his lower extremities were becoming "numb" and that he could move about much more successfully if he watched the floor and his extremities while he walked. About four weeks before admission, the patient noticed a burning pain along the medial aspect of the right foot which came and went for varying periods of time until two weeks before admission, when the pain became continuous.

*Examination.*—General physical examination revealed no pertinent findings beyond the well healed scars over the lumbosacral area and over the tibia. The cranial nerves and upper extremities were normal. The actual muscular weakness in the lower extremities was not pronounced, but there was a severe extensor spasticity with hyperactive tendon reflexes. Babinski's sign was present bilaterally. There was a fairly well sustained ankle clonus on both sides. All the abdominal reflexes were present but weak. Vibratory sense was decreased from the iliac spines downward, and position sense was decreased in the toes, the ankles and the knees. There was hypesthesia to light touch in the tenth to the twelfth thoracic dermatomes on the left side. The patient's gait revealed a moderate degree of spasticity and of ataxia which was accentuated when his eyes were closed. His body swayed when his feet were together and his eyes closed.

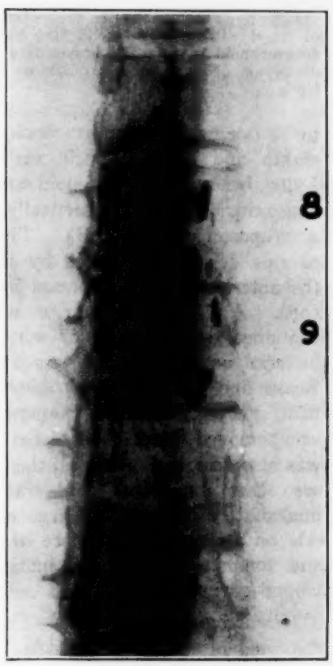


Fig. 1.—Encysted iodized poppy seed oil at level of eighth and ninth thoracic vertebrae. Patient in the upright position.

Roentgen examination of the lumbosacral area revealed evidences of the known spondylolisthesis along with irregular shadows representing iodized oil in the spinal canal. At the level of the eighth thoracic vertebra were two large globules of iodized oil slightly to the right of the midline (fig. 1). The position of these globules of oil did not change regardless of whether the patient was recumbent, standing upright or placed with his head downward. The blood count and smears were normal, and gastric analysis revealed the presence of free hydrochloric acid. The Kahn reactions of the blood and the spinal fluid were negative. There was 25 mg. of protein per hundred cubic centimeters in the spinal fluid. At the first lumbar puncture, the initial pressure was 130 mm. of fluid. A sphygmomanometer cuff was placed around the patient's neck and the pressure kept at 60 mm. of mercury (blood pressure 130/80) for thirty seconds. Twenty seconds after the onset of this compressoin a slow rise of the spinal fluid pressure to 190 mm. occurred. When the jugular compression was released, there was a slow return of the intraspinal pressure to 130 mm., which required fifty seconds to complete. Abdominal compression caused a rapid rise and fall of the intraspinal pressure.

It was felt, however, that further substantiation of the subarachnoid block was desirable, so an amyl nitrite test was

Read before the Chicago Neurological Society, Nov. 19, 1942.

From the Department of Neurology and Neurological Surgery, University of Illinois College of Medicine.

1. Marcovich, A. W.; Walker, A. E., and Jessico, C. M.: The Immediate and Late Effects of the Intrathecal Injection of Iodized Oil, J. A. M. A. **40**: 2247-2254 (May) 1941.

performed according to the method described in 1932 by Elsberg and Hare.[2] This caused the lumbar intraspinal pressure to rise from 58 to 90 mm. of fluid (fig. 2).

*Operation.*—On March 10, the lower part of the seventh, all of the eighth and the upper part of the ninth thoracic vertebral laminas were removed. The dura mater appeared

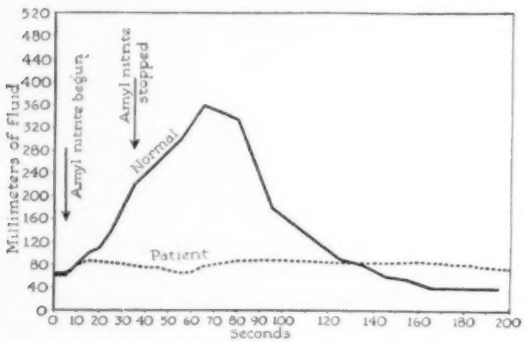


Fig. 2.—The response of the pressure of the spinal fluid to inhalation of amyl nitrite. The solid line represents the reaction in a normal subarachnoid space. The broken line is the reaction in the patient under discussion. The latter represents an almost complete spinal subarachnoid block.

to be normal, but the arachnoid membrane at the level of the eighth and ninth thoracic vertebrae was opaque and white. Lying beneath the arachnoid membrane was a cyst measuring approximately 1.5 cm. vertically, 1 cm. horizontally and 1 cm. anteroposteriorly (fig. 3). The posterior and lateral walls of this cyst were formed by the arachnoid membrane while the anterior wall was formed by the pia mater and the spinal cord. All but the anterior wall was removed. This cyst contained liquid iodized oil very similar in appearance to that material as obtained in glass ampules from the manufacturer. Below and a little to the right of this large cyst was a small, firm, yellowish nodule measuring 0.5 cm. in diameter. It was removed intact. All of the thickened arachnoid membrane was also removed. After all these tissues were extirpated it was seen that the spinal cord was slightly enlarged posteriorly immediately beneath the large oil-filled cyst and that the vessels on the posterior surface of the spinal cord were enlarged and tortuous. The dura mater was closed tightly and the wound sutured in the usual manner.

*Microscopic Examination.*—The material removed at operation consisted of collagenous tissue. It was delicate and fibrillary and appeared to be edematous. The nuclei were narrow and elongated. The tissue in no place resembled normal arachnoid membrane.

*Postoperative Course.*—Following the operation, the patient made an uneventful recovery, and the wound healed by first intention. He left the hospital thirteen days after the operation. Examination at this time revealed no change in the clinical findings except that ankle clonus was no longer present. The patient stated that he was able to walk around with greater facility than before the operation.

He was seen again on April 4. His gait was no longer ataxic but was still slightly spastic. The Romberg test was still moderately positive. The knee jerks were only slightly hyperactive, the left being more active than the right. Ankle clonus was present at this examination. Babinski's sign was no longer present. Vibratory and position sense were intact in the right lower extremity but almost entirely absent in the left.

He was seen again on May 1. He stated that his walking had steadily improved since he left the hospital. Examination revealed a normal gait. There was no swaying in the Romberg position and he walked tandem without difficulty. Tactile sensation was everywhere normal. Vibratory and position sense were both practically intact. The knee and ankle jerks were still hyperactive but much less so than previously. Ankle clonus and Babinski's sign were absent.

2. Elsberg, C. A., and Hare, C. C.: A New and Simplified Test for the Determination of Spinal Subarachnoid Block by Means of the Inhalation of Nitrate of Amyl, Bull. Neurol. Inst. New York **2**: 347-371 (Nov.) 1932.

COMMENT

It is obvious that this is no ordinary case. Ordinarily iodized oil descends to the bottom of the meningeal sac in the sacral region and there either remains free and fluid or becomes encysted. In either event it produces no more than mild transitory symptoms. Even in those cases in which it has become lodged in the intracranial cavity, demonstrable effects have not resulted.[3]

That a considerable quantity of the iodized oil became lodged at the level of the eighth thoracic vertebra and remained there over a period of several years in spite of the patient's activity is definite evidence that there was some preexisting lesion at that level, probably an arachnoiditis. Such a likelihood immediately raises the question as to whether the arachnoiditis alone might not be responsible for the symptoms which developed in this case. That adhesive spinal arachnoiditis alone might so involve the spinal cord as to produce such symptoms cannot be denied. Yet the complete absence of any symptoms of involvement of the spinal cord at this level prior to the introduction of the iodized oil, the known tendency for iodized oil to stimulate fibroblastic proliferation in the leptomeninges[4] and the fact that the patient made such a rapid recovery once

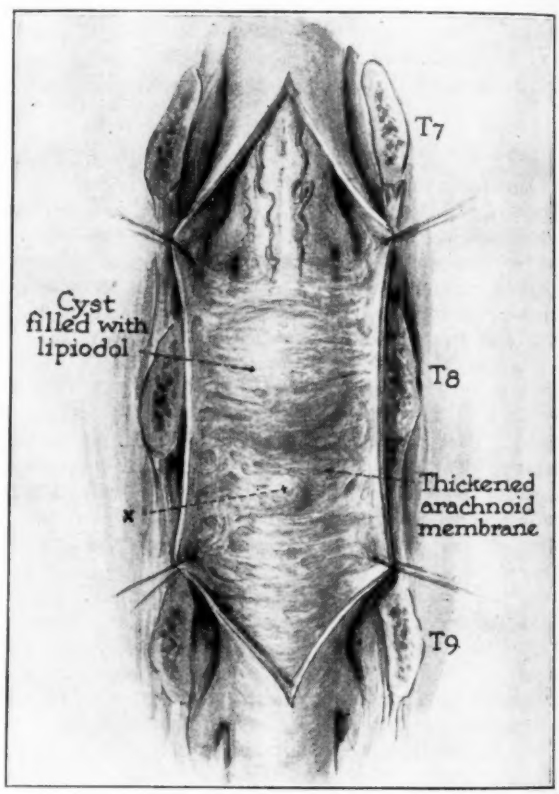


Fig. 3.—Drawing of the operative field with the dura mater open. Note the large cyst filled with iodized poppy seed oil and surrounded laterally and posteriorly by thickened arachnoid membrane. *X*, small yellow fibrous nodule containing iodized oil.

the encysted iodized oil was removed all point strongly toward the implication of the iodized oil as well as the preexisting arachnoiditis as causal factors in this case.

3. Garland, P. H., and Morrissey, E. J.: Intracranial Collections of Iodized Oil Following Lumbar Myelography, Surg., Gynec. & Obst. **70**: 196-210 (Feb.) 1940. Marcovich, Walker and Jessico.[1]

4. Brown, H. A., and Carr, J. L.: The Effect of Lipiodol in the Subarachnoid Space, Surg., Gynec. & Obst. **68**: 945-951 (May) 1939. Marcovich, Walker and Jessico.[1]

In view of the recent thorough discussion by Marcovich, Walker and Jessico [1] of the effects of the intraspinal injection of iodized oil, there is no occasion for a repetition of that discussion here.

SUMMARY

A man aged 36 suffered from spondylolisthesis for which the lumbosacral spine had been fused in April 1937. In March 1938, because of the development of left sciatica, iodized oil was injected intraspinally. Fluoroscopy revealed that some of the iodized oil lodged at the level of the eighth thoracic vertebra and remained there. Late in 1941 progressive symptoms of involvement of the spinal cord developed at that level. On lumbar puncture in February 1942 an almost complete spinal block was found. At operation on March 10 two collections of encysted iodized oil in the subarachnoid space, and a very much thickened arachnoid membrane were found and removed. Within a few weeks after the operation the patient had made a nearly complete recovery.

CONCLUSIONS

From a study of this case, it is concluded that:

1. This patient suffered from a localized adhesive arachnoiditis at the level of the eighth thoracic vertebra prior to the injection of the iodized oil.

2. This arachnoiditis caught and held some of the iodized oil, which in turn stimulated fibroblastic proliferation in the leptomeninx, thus increasing the arachnoiditis and resulting in dysfunction of the spinal cord.

3. Although the intraspinal injection of iodized oil is ordinarily an innocuous procedure, the existence of a lesion which retains the iodized oil in contact with the spinal cord may ultimately result in undesirable changes in the spinal cord.

912 South Wood Street.

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## COLD AGGLUTININS: A DIAGNOSTIC AID IN CERTAIN TYPES OF PRIMARY ATYPICAL PNEUMONIA

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The occurrence of autohemagglutinins or so-called cold agglutinins in high titer in the serum of patients with primary atypical pneumonia has been reported recently by Peterson, Ham and Finland.[1] These authors point out that the presence of true, reversible autohemagglutination may serve as a criterion for segregating some of the cases of primary atypical pneumonia. Although the test is not entirely specific, it would appear to have practical value in this part of the world, since the only infectious disease in which the phenomenon has been described consistently is African trypanosomiasis.[2] Furthermore, autohemagglutination does not occur with any regularity in other clinical conditions, although it has been observed rarely in a few, including lobar pneumonia.[3]

The present report is confirmatory of the observations made by Peterson, Ham and Finland and deals with the testing of the serums of 43 patients with primary atypical pneumonia for cold agglutinins.

Aided by a grant from the Fluid Research Fund, Yale University School of Medicine.

From the Section of Preventive Medicine and the Department of Internal Medicine, Yale University School of Medicine.

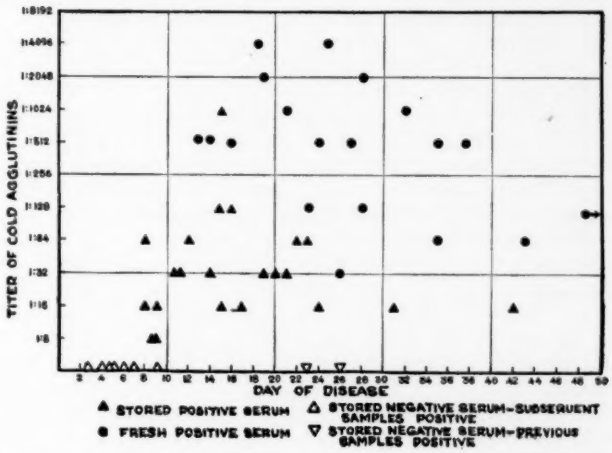
1. Peterson, O. L.; Ham, T. H., and Finland, Maxwell: Cold Agglutinins (Autohemagglutinins) in Primary Atypical Pneumonias, Science **97:** 167 (Feb. 12) 1943.

2. Yorke, W.: Autoagglutination of Red Blood Cells in Trypanosomiasis, Ann. Trop. Med. & Parasitol. **4:** 529, 1910.

3. McCombs, R. P., and McElroy, J. S.: Reversible Autohemagglutination with Peripheral Vascular Symptoms, Arch. Int. Med. **59:** 107 (Jan.) 1937.

MATERIAL

The serums investigated were, for the most part, collected from patients in the New Haven vicinity during the winters of 1941-42 and 1942-43; a few samples (from 3 patients) were received from North Carolina in March 1943. All of the New Haven patients gave a characteristic history and exhibited




The titers of cold agglutinins in 27 cases of primary atypical pneumonia. Points represent 50 samples of blood taken on various days of the disease. The point with the arrow at the extreme right indicates a sample taken on the fifty-ninth day of the disease.

the usual physical and laboratory manifestations of primary atypical pneumonia.[4] In every case there was positive x-ray evidence of pneumonitis. About half the patients had received sulfonamide therapy at some time during the illness. From 43 patients 84 blood specimens were collected at varying times in the course of the disease; 56 of these specimens had been stored in the ice box at 5 C. for one to fourteen months. In addition there were 135 control serums representing normal persons, patients from the isolation unit of the New Haven Hospital and patients from the general medical and surgical wards.

METHOD

Agglutination tests were set up as follows: Dilutions of the patient's serum from 1:4 to 1:4,096 were made in 1 cc. volumes. To each dilution 0.1 cc. of a 2 per cent suspension of washed human red cells, group O, was added.[5] The tubes were kept at 0 C. overnight. Readings were made immediately after removal from the ice box and after the preparation had remained at room temperature for several hours. The second reading was made to ascertain whether the reaction was reversible at room temperature and therefore a true cold agglutination. Positive results were interpreted in graduations from 4 plus (a tight disk of red cells on inverting the tube three times) to 1 plus (a fine granular appearance on similar agitation).

RESULTS

All of the 135 control serums were negative for cold agglutinins, as were those from the 3 patients from North Carolina. In the 40 New Haven cases of primary atypical pneumonia, positive reactions were found in 8 out of 9 patients whose serums were tested soon after bleeding and in only 19 of the remaining 31 patients whose serums had been stored before examination. The titers in the stored serums were strikingly lower than in the fresh specimens. This same difference was noted by Peterson, Ham and Finland, who found negative reactions in a number of serums that had been kept for six months or longer; the discrepancy was thought to be related possibly to a loss of agglutinins on storage or to a difference in the disease.

4. Dingle, J. H., and Finland, Maxwell: Medical Progress: Virus Pneumonias: II. Primary Atypical Pneumonia of Unknown Etiology, New England J. Med. **227:** 378 (Sept. 3) 1942.

5. Human autohemagglutinins are known to act as isoagglutinins. Group O red cells were used to avoid the usual intergroup reactions.

The accompanying chart indicates the relationship between the titers and the day of the disease on which the blood was collected. On this chart have been recorded samples of serum from 27 patients who gave at least one positive reaction. Patients who gave only negative reactions have not been included.

In general, the results indicate that in many cases of primary atypical pneumonia the rise in titer of cold agglutinins occurs about one week after the onset of symptoms and may persist for several weeks after recovery. In no case of our series did the test become positive before the eighth day, and the majority were positive during the second to the fourth week of illness. However, it should be pointed out that most of our material was not collected with cold agglutinins in mind, and in many cases only a single specimen was available. The serums are therefore too scattered and irregular as to time to allow definite conclusions.

The fact that all 3 North Carolina patients gave negative reactions on three satisfactorily spaced specimens examined soon after collection is important. It indicates that further tests are in order to investigate the possibility of different types of primary atypical pneumonia existing in various regions of the country.

In our limited series there appeared to be no clearcut correlation between the titer of cold agglutinins and the severity of the disease. However, among the few very high titers were 2 severe cases in which hemolytic crises developed. In 1 of these recovery occurred, but the other terminated fatally. The latter case is of special interest:

### REPORT OF CASE

M. T., a housewife aged 47 whose symptoms began Oct. 1, 1942, was treated for several days with sulfadiazine without effect and was admitted to the New Haven Hospital on October 8 with a temperature of 103.6 F. and x-ray evidence of pneumonia in the left upper, the left lower and probably the right upper lobe. Her blood count on admission showed 10,000 white blood cells, of which 86 per cent were polymorphonuclear leukocytes; the hemoglobin was 12.5 Gm. and the red blood cells numbered 4,400,000. During the eight days after admission her temperature varied between 102 and 105 F., and there was increasing respiratory embarrassment. On the sixteenth day of her illness there was a sudden hemolytic crisis in which the hemoglobin fell rapidly to 4.1 Gm. and the white blood cells rose to 100,000. At the same time extreme autohemagglutination was noted, even at room temperature; the clumping of red blood cells in the counting chamber made it impossible to make an accurate red cell count. The serum taken on the first day of hemolysis had a titer of 1:1,024 for cold agglutinins when tested after four months storage. There was definite hemoglobinemia and hemoglobinuria. The patient rapidly became moribund and died without response to emergency splenectomy. Autopsy revealed a diffuse bilateral interstitial pneumonitis with round cell infiltration and interalveolar exudate also composed largely of mononuclear cells. There was some reticuloendothelial and bone marrow hyperplasia and hemosiderosis of the abdominal organs, but no explanation of the hemolytic episode was found.

### COMMENT

Although this patient had received sulfadiazine prior to admission to the hospital, none had been given for the nine days before hemolysis occurred. It is not known what part the drug played in the development of her anemia, but as far as the autoagglutination is concerned our series shows that this phenomenon occurs in high titer in patients with primary atypical pneumonia who have not received sulfonamide therapy.

### SUMMARY

The presence of cold agglutinins has been noted in a group of New England patients suffering from primary atypical pneumonia. These results confirm those reported by Peterson, Ham and Finland and further suggest that this simple test may be a valuable diagnostic measure in some forms of this disease.

## *Council on Industrial Health*

THE COUNCIL ON INDUSTRIAL HEALTH HAS RECEIVED THE FOLLOWING RECOMMENDATIONS FROM THE COMMITTEE ON OCCUPATIONAL DERMATOSES, SECTION ON DERMATOLOGY AND SYPHILOLOGY, AMERICAN MEDICAL ASSOCIATION. C. M. PETERSON, M.D., Secretary.

# RECOGNITION AND PREVENTION OF INDUSTRIAL DERMATITIS

## WITH ADDITIONAL REFERENCE TO OIL DERMATITIS AND FOLLICULITIS

## A REPORT OF THE COMMITTEE ON OCCUPATIONAL DERMATOSES, AMERICAN MEDICAL ASSOCIATION

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The incidence of occupational dermatitis in our country has never been so great as at the present time, and the need for adequate prevention and control has never been more important. New industries, particularly those concerned with the war effort, have contributed many causative agents to industrial dermatitis. In old industries, where dermatitis was commonly observed, the step-up in industrial activities and the enrolment of new employees have resulted in a definite increase in dermatitis, particularly among men and women above and below the usual employment ages. In the accelerated program of the heavy industries, inflammation of the skin caused by cutting oils, lubricating oils and related compounds has been particularly prevalent and troublesome.

The Council on Industrial Health functions as a liaison between the various lay and medical groups concerned with the industrial dermatoses problem, and the practicing and consulting dermatologists, as represented by this committee. It is the intent of this committee to serve all groups in an advisory capacity and to act as pacemaker for individual dermatologists and industrial physicians by crystallizing dermatologic opinion on certain issues and by establishing basic formulas for the correct diagnosis and adequate management of occupational dermatoses. It seems pertinent, therefore, to review this subject at this time, even at the risk of some repetition, and to make certain pronouncements, even though they may appear dogmatic.

### RECOGNITION

The recognition of an occupational origin may be quite obvious in some cases of dermatitis but very difficult to establish in others. The importance of establishing a correct diagnosis early in the course of dermatitis cannot be overemphasized, since it involves correct and adequate treatment and also determines questions of liability, disability and changes of work. The diagnosis and treatment of industrial dermatitis require adequate dermatologic knowledge and preferably the services of a dermatologist. Too frequently the latter is called too late; therefore, when dermatologic service is readily available it should be sought promptly.

The patch test is an important aid in the diagnosis of dermatitis but it is responsible for many errors, especially when relied on for diagnosis and when testing with primary irritants. Its chief value is in the investigation of dermatitis resulting from hypersensitivity to allergenic substances. Some pitfalls of "patch test diagnosis" may be avoided by careful and thorough history taking. To cite a simple example, a painter may present a dermatitis venenata and react positively to a patch test with turpentine, which is a primary irritant, yet his dermatitis may have resulted from exposure to poison ivy while rabbit hunting. It has been Osborne and Hallett's [1] clinical experience that persons presenting a state of hypersensitivity to a specific chemical substance which in full strength is a primary irritant will always give a positive patch test to a 10 to 1 dilution. Sulzberger and Rostenberg [2] have observed positive patch test reactions in 1:10,000 and even 1:100,000 dilutions and they state that the vehicle has an important bearing on reactions, depending on whether water, oil, alcohol, ether or acetone is used.

This committee is accumulating information on chemicals used in industry to determine their "thresholds of irritability" on normal skin and has specified that "the concentration which should be recorded as the primary irritating one of a chemical studied is that which produces a cutaneous reaction in the majority of persons tested." Information will be published on this important subject from time to time.

Because of their importance to the industrial physician and dermatologists we repeat here the definitions of primary irritants and sensitizing agents, and the criteria for diagnosis, as previously published by this committee.[3] Familiarity with them is a basic requirement for a proper understanding of industrial dermatology but it implies likewise the need for an adequate knowledge of nonindustrial dermatology for proper evaluation and interpretation.

### DEFINITION OF A PRIMARY SKIN IRRITANT

1. When a substance in a given concentration, in a given vehicle and after a given manner and length of exposure produces a clinically manifested irritation on the skin of a majority of persons not previously sensitized to that substance, then that substance is a primary irritant under the specified conditions.

2. The irritation may be redness, papulation, vesiculation, ulceration or other sign of damage at the site to which the irritant has been applied.

3. By contrast, substances which produce reactions only on the skin of persons who are hypersensitive to that substance are not primary irritants.

4. A sensitizing agent is one that increases the tissue capacity to react to subsequent exposure.

5. Hypersensitivity means having a greater capacity to react than the normal.

Limitations to such a definition are recognized because of numerous and complicated circumstances operating in determining the irritant action of a given substance. The following may be mentioned: The region of the skin surface exposed and the size of the area exposed to the irritant. The physiologic state of the skin with reference to dryness, oiliness, perspiration, the degree of pigmentation. The general state of health, the emotional background and the influence of season, diet and actinic rays. The action of two substances in combination each of which alone does not exert an irritant action.

The fundamentals for the differentiation of occupational from nonoccupational dermatitis are clearly defined in the following "criteria for diagnosis," which were adopted by the committee [3] from material previously published by Sulzberger, Lane and others:

1. The dermatologic diagnosis is a dermatosis in which the role of an occupational causal factor (major or contributory) has at some previous time been established beyond reasonable doubt.

2. The individual has been working in contact with an agent known to have produced similar changes in the skin.

3. The time relationship between exposure to the agent and the onset of the dermatitis is correct for that particular agent and that particular abnormality of the skin.

4. The site of the onset of the skin disease is the site of maximum exposure.

5. The lesions present are consistent with those known to have followed the reputed exposure or trauma.

6. The individual is employed in an occupation in which similar cases have previously occurred.

7. Some of the individual's fellow workers using the same agent are known by the examiner to have similar manifestations due to the same cause.

8. So far as the examiner can ascertain there has been no exposure outside occupation which could be implicated.

9. If the diagnosis is dermatitis, the following items are important.

(*a*) The evidence of previous attacks coming after exposure to an agent followed by improvement and clearing after cessation of exposure constitutes most convincing evidence of the occupational factor as a cause.

(*b*) The results of patch tests performed and interpreted by competent dermatologists corroborate the findings of the history and examination in the majority of cases.

It is realized that these criteria are difficult of application in certain groups of cases, such as:

1. Sensitization cases.

2. Cases in which there is accentuation of existing skin disease by occupational factors.

3. Cases in which there are supervening complications of other dermatoses and occupational dermatoses.

4. Cases in which much time has elapsed between the development of the dermatoses and the examination.

5. Cases which have been overtreated.

A knowledge of sensitization dermatitis and of sensitizing or allergenic substances is of utmost importance and necessitates familiarity with the fundamental concepts of cutaneous allergy. Cases of occupational dermatitis due to an allergic type of acquired sensitiveness are less frequent than dermatitis resulting from exposure to primary irritants, but they are likely to be more severe and more protracted and also prone to recurrence and prolonged disability. The investigation and treatment of such cases should be carried out by the dermatologist.

1. Osborne, E. D., and Hallett, J. J.: New York State J. Med. **42**: 1529 (Aug. 15) 1942.

2. Rostenberg, Adolph, Jr., and Sulzberger, M. B.: J. Invest. Dermat. **2**: 93 (June) 1939.

3. Industrial Dermatoses, A Report by the Committee on Industrial Dermatoses of the Section on Dermatology and Syphilology of the American Medical Association, J. A. M. A. **118**: 613-615 (Feb. 21) 1942.

Discussions concerned with differential diagnosis of industrial dermatitis invariably bring up the subject of fungous infection. Direct fungous infection of the hands of the epidermophytosis type does occur, though not frequently, and its diagnosis should be supported by demonstration of the causative organism in skin specimens. On the other hand, a diagnosis of fungous infection on the feet may be based on clinical observation without laboratory support if the examiner is experienced in dermatologic procedure. Epidermophytid eruptions of the hands are common and may be mistaken for occupational contact dermatitis. Epidermophytid eruptions on the hands definitely lower the skin tolerance to chemical irritants and allergens and are therefore to be considered predisposing causes of occupational dermatitis. It is the thought of some dermatologists and allergists that epidermophytosis of the feet or groins, even in the absence of the so-called "id" eruptions, may predispose to contact dermatitis when the patient is in an allergic state, as indicated by a positive trichophyton test. All patients with occupational dermatitis should be examined for epidermophytosis and treated if they have the infection, because of these sensitizing factors. The possible predisposing influence of epidermophytosis of the feet in the causation of torch oil dermatitis of the hands was demonstrated by Kammer and Callahan [4] some years ago and warrants consideration for other types of dermatitis. This committee is agreed on the importance of the superficial fungous infections in the causation and differentiation of occupational dermatitis.

Dennie and Lacey [5] have reduced dermatitis to a minimum in an important munitions plant by routine consideration of the following four factors:

1. Routine examination for fungous infection of the feet and treatment, when indicated, as a preventive procedure.
2. Investigation of the allergic background of patients.
3. Neurogenic and psychogenic relationships in the development or persistence of occupational dermatitis.
4. Correction of faulty dietary habits.

Lacey found the dietary regimen of several thousand workers so poor that he arranged for one good meal a day at the plant in addition to placing patients with dermatitis on vitamin therapy, particularly vitamin C, and on hydrochloric acid.

When large numbers of new employees enter an industry with cutaneous hazards or when an old industry introduces new chemicals that may produce dermatitis, the incidence of dermatitis may be high and usually drops as workers become accustomed or "hardened" to their new exposures or learn how to protect themselves. This has been observed by Schwartz in war industries, particularly with exposure to tetryl and trinitrotoluene.

## PREVENTION

As in all matters concerning the public health, and in this instance industrial health, prevention is the first consideration. The Dermatoses Investigations Section of the United States Public Health Service exercises a particularly important and useful function in this field and some state boards of health have created important auxiliary services.

4. Kammer, Adolph G., and Callahan, Richard H.: Torch Oil Dermatitis, J. A. M. A. **109**: 1511 (Nov. 6) 1937.
5. Dennie and Lacey: Verbal communication.

The prevention of industrial dermatitis may be discussed under the headings personnel, protection and cleansing procedures.

### A. PERSONNEL

1. *Selection.*—One of the most effective means of reducing dermatitis in industries where there is a dermatitis hazard that cannot be eliminated is by the selection of a suitable working personnel. It is in the interest of labor to support legislation for routine preplacement examination. To remove a workman from a job that is known to be potentially harmful to him and to place him at a suitable job is acting in his particular interest as well as in the interest of his employer. Industrial selective service is in the interest of national efficiency, and when it includes selection on a basis of medical considerations it is an advancement in industrial health.

It may be advisable to exclude from certain occupations individuals with a history of recent skin disease of the dermatitis or eczema type, those with evidence of present or past dermatitis at the time of examination, and those with a type of skin susceptible to dermatitis. For example, workers with dry or ichthyotic skins should not work with solvents and degreasers, and blonds should not work with photosensitizing agents. A history of previous allergy need not be a barrier. Workmen apparently in normal health as regards cutaneous and other systems and medical history may develop occupational dermatitis, but the incidence of dermatitis in a carefully selected personnel is likely to be lower and the management of such cases simpler than, for example, in the case of persons with allergy. The patch test has no place in routine preemployment examination but there are definite indications for its use. It should be employed and interpreted only by or with the cooperation of a dermatologist. Sulzberger refers to reports of W. Jadassohn and of international industrial meetings at Geneva as his authority for stating that, "properly used, the patch test has proved itself to be one of the best methods for eliminating unsuitable employees in hazardous industries."

2. *Instruction, Training and Inspection.*—Having selected a suitable personnel for an industry with a dermatitis hazard, the employer should organize instruction of employees in the hazards of the trade or occupation and the methods of combating or minimizing them. Foremen and forewomen, in their first aid training, should be taught the importance of dermatitis prevention. This includes attention to minor injuries, removal of irritants from the skin, selection of cleansers, attention to personal hygiene of skin and care of clothing. Workmen must be instructed and trained in these details. They must learn that an intact, clean, normal skin is the best protection against infection and dermatitis and also that prolonged contact with chemical irritants and improper cleansing material or methods increases the liability to dermatitis. Routine inspections and instruction in proper hand cleansing procedures, especially under the supervision of an industrial nurse, are important. Posters are an effective means of conveying such information and have been introduced by the U. S. Public Health Service and some insurance companies.

Present nonoccupational skin diseases should be regarded as potential and actual hazards and must not be neglected. Minor folliculitis, particularly in machinists, may predispose to disabling furunculosis, and

seborrheic dermatitis may be the basis for the development of an eczematous occupational contact dermatitis. Some authorities believe that the quite prevalent fungous infections of the feet and groins may act as sensitizing and predisposing agents to contact dermatitis of the hands and forearms. Epidermophytids on the hands may cause confusion in diagnosis and may lead to superimposed contact dermatitis by furnishing portals of entry for chemical and infectious agents. A workman returning to his job after an illness should be subjected to a routine physical check-up.

### B. PROTECTION

The protective measures to be employed or recommended depend on the nature of the exposures and the manner in which the materials are used. Elimination or reduction of the incidence of dermatitis has been accomplished in many instances by directing attention to inadequacies of factory sanitation and sanitary engineering as they are related to the particular dermatologic problem. The modern factory that has adequate provision for ventilation, sunlight, mechanical appliances to reduce hand operations and contacts, suction fans for the removal of irritating dusts and fumes, adequate working space to prevent overcrowding and facilities to encourage personal cleanliness on the part of the workers during and after working hours and during lunch and recreational periods will always show a lower incidence of illness, absenteeism and industrial injuries and disease than a factory doing identical work and lacking these facilities. Furnishing simple tools and brushes with appropriate handles to replace dirty rags and direct hand application of chemicals will prevent dermatitis. This is particularly important where solvents are concerned. The simple expedient of installing a few ventilating fans, several shower baths and clothes lockers in a small factory has on more than one occasion saved an individual industry from disaster when dermatologic procedures alone had failed.

Mechanical protective and preventive measures that concern the individual workman include mechanization that reduces direct hand contacts with irritant chemicals. Where the latter cannot be avoided, protective measures include gloves, aprons and pants made of materials impervious to the particular irritant chemical likely to produce dermatitis.

When gloves cannot be worn because of a machinery hazard, protective chemical agents may be applied directly to the skin. Protective ointments, creams and lotions, unlike protective clothing, possess the added value of taking dirt and chemical agents with them on removal, but they do not furnish as adequate protection. They rub off during work and they are not always properly or regularly applied. Such protective applications must meet four minimal requirements: They must be of such consistency that they remain on the skin satisfactorily so as to furnish adequate protection against irritant contacts while at work, they must be easy to apply before work and readily removed after work, and they must not contain primary irritants or sensitizing agents. Protective creams and ointments are of questionable value when exposures are massive or continuous or the substances strongly irritating. Another important essential for protective creams is cheapness of preparation in bulk. Protective applications must be selected for each type of industrial exposure. For example, oily substances, such as a mixture of hydrous wool fat and castor oil, are best for protection against commercial and industrial organic solvents that act as degreasing agents by dissolving the natural protective oil on the skin. On the other hand, a cream containing boric acid may be used as a protection against exposure to alkalis that macerate the epidermis.

Klauder, Gross and Brown [6] thoroughly investigated the subject of protective hand creams and cleansers and have suggested formulas 1 to 9.

FORMULA 1

| | Per Cent |
|---|---|
| Petrolatum | 70.0 |
| Hydrogenated cottonseed oil | 30.0 |

FORMULA 2

(A modification of simple ointment, U. S. P.)

| | Per Cent |
|---|---|
| White wax | 5.0 |
| Glyceryl monostearate | 12.5 |
| Hydrous wool fat | 5.0 |
| Sodium silicate, commercial solution | 5.0 |
| Ammonium hydroxide, 10 per cent solution | 0.5 |
| Petrolatum | 72.5 |

FORMULA 3

To formula 2, 5 per cent by weight of latex is added, which produces a rubbery film on the skin.

FORMULA 4

| | Per Cent |
|---|---|
| White wax | 10.0 |
| Hydrous wool fat | 5.0 |
| Glyceryl monostearate | 12.5 |
| Stearic acid | 2.0 |
| Petrolatum | 70.5 |

FORMULA 5

| | Per Cent |
|---|---|
| White wax | 10.0 |
| Hydrous wool fat | 5.0 |
| Sulfonated olive oil | 10.0 |
| Petrolatum | 75.0 |

(This is recommended when there is prolonged contact with water.)

Nongreasy preparations which dry on the skin and do not rub off are indicated in dry work and against dust borne irritants.

FORMULA 6

| | Per Cent |
|---|---|
| Glyceryl monostearate | 12.0 |
| White wax | 12.0 |
| Wool fat | 6.0 |
| Cholesterol | 1.0 |
| Sodium silicate, commercial solution | 5.0 |
| Ammonium hydroxide, 10 per cent solution | 0.5 |
| Water | 63.5 |

FORMULA 7

| | Per Cent |
|---|---|
| Ethyl cellulose | 5.0 |
| Mastic | 8.0 |
| Castor oil | 1.0 |
| Acetone (technical) | 86.0 |

FORMULA 8

| | Per Cent |
|---|---|
| Polyvinyl acetal resin (Monsanto) | 5 to 10.0 |
| Castor oil | 1.0 |
| Acetone (technical) | 89 to 94.0 |

Another type is a thick paste which leaves an impervious covering. The preparation is somewhat sticky and soiling, therefore appropriate only in certain work.

FORMULA 9

| | Per Cent |
|---|---|
| Zinc oxide | 25.0 |
| Kaolin | 25.0 |
| White petrolatum | 50.0 |

Schwartz [7] more recently reviewed this field and described the following six classes of protective applications:

1. A simple vanishing cream which, when rubbed into the skin, fills the pores with soap and facilitates the

6. Klauder, J. V.; Gross, E. R., and Brown, Herman: Prevention of Industrial Dermatitis, Arch. Dermat. & Syph. **41**: 331 (Feb.) 1940.
7. Schwartz, Louis: M. Clin. North America **26**: 1195 (July) 1942.

removal of dirt when washing after work: Stearic acid 20, sodium carbonate 2, glycerin 6, water 78.

2. Ointments, emulsions or solutions of "invisible glove" type, either water soluble or water insoluble, that leave a thin protective film of resin or wax on the skin. Because of the tendency of perspiration to loosen or remove the water soluble type, fats or oils may be added. The water insoluble resins or waxes require a volatile solvent for application and a special cleanser for removal, either of which may irritate the skin after frequent use. Possible irritant effect may be minimized by the application of a hydrous wool fat cream after work. This type of protection may be used on the face, especially when masks or respirators are worn. A. Acacia 5, tragacanth 5, borax 2, water 88 (water soluble glove). B. Gum benzoin 5, beeswax 2, anhydrous wool fat 5, ethyl alcohol 88 (water insoluble glove).

3. Ointments that fill the pores with a harmless fat protect against water soluble irritants and petroleum oils and to some extent against greases: anhydrous wool fat 70, castor oil 30, with sufficient perfume. To facilitate the removal of this type of protective ointment, wetting agents may be added.

4. Protective ointments containing nonirritant chemicals to neutralize industrial irritants. Boric and benzoic acid are recommended to neutralize industrial alkali, soaps and magnesium hydroxide to neutralized industrial acids, and nonirritant oxidizers such as dichloramine T to detoxify vesicant gases: magnesium carbonate 5, talc 5, soap 30, hydrous wool fat 30, castor oil 28, duponol 2, with sufficient perfume.

5. Protective ointments which permit inert powders to adhere to the skin and thus form a protective covering. This type of protection is recommended for exposures to allergenic substances such as the chemicals used in the manufacture of explosives, and for protection against mechanical irritation of abrasives, particles of steel and glass and so on: zinc oxide 5, talc 5, iron oxide 1, irish moss 2, gum benzoin 2, water 10, alcohol 15, vanishing cream 60.

6. Protective applications against photosensitizing agents, such as the heavy coal tar and oil distillates: hydrous wool fat 58, castor oil 30, titanium dioxide 5, menthyl salicylate 5, duponol 2, with sufficient perfume.

### C. CLEANSING AGENTS

The need of adequate and proper cleansing of the skin to prevent dermatitis may seem too obvious to require discussion. It is important, however, and is ignored or not understood by many workers. Sometimes more cases of dermatitis result from improper cleansing than from the industrial exposure. The common practice of workmen to use the materials employed in their trade for cleansing purposes may provoke dermatitis. Painters use turpentine, machinists gasoline, printers kerosene, others alkaline wash powders.

The best cleanser is a mild toilet soap and plenty of warm water. Employers should insist on thorough washing of the hands, forearms and face at the end of the work day and at noon where chemical irritants are handled or disseminated as dust. Frequent changes of work clothes is a necessary corollary. The use of abrasive soaps and cheap bulk soaps is to be discouraged, and appropriate creams should be applied after washing when there has been exposure to solvents. Contaminated waste and rags used for wiping hands and forearms are a source of dermatitis and skin infections. Soaps act as cleansing agents chiefly by emulsifying and dissolving the fats, oils and greases on the skin surface, and these and the dirt and chemicals adhering to them are then flushed off with water. Klauder stated that soap is not sufficiently soluble as customarily used to permit the alkaline salts to act as skin irritants, except after prolonged contacts, whereas soap powders, especially when containing sodium carbonate, may readily act as irritants. Coconut oil is a common ingredient of soap and may sometimes be a source of skin irritation and sensitization.

Schwartz [7] states that "a normal industrial cleanser for general use should consist of a superfatted neutral toilet soap, containing a wetting agent or synthetic detergent. It should contain a minimum of free alkali and have a $p_H$ of 10 or less in a 1 per cent solution. It should not contain silica, quartz, pumice, feldspar, rosin fillers or organic solvents." The following formula is recommended: neutral toilet soap 30, bentonite 30, santomerse 10, hydrous wool fat 5, perfume 1.

"Wetting agents" lower the surface tension of cleansing liquids and thus increase their effectiveness as cleansers by facilitating their spread over the skin surface and by penetration of the pores. Wetting agents facilitate the removal of both oil soluble and water soluble skin contaminants. Sulfonated oils are important cleansers in industry for workers who have developed dermatitis or who may not tolerate soaps. Osborne prefers alkyl sulfonates to sulfonated oils as soap substitutes because of repeated observation of dermatitis resulting from the use of sulfonated oils. On the other hand, C. G. Lane observed less than 1 per cent positive patch tests to sulfonated oils in 350 patients and found this oil particularly helpful as a skin cleanser in eczematous cases and for workers intolerant to soap. Klauder and his associates selected formulas 10 to 13 for sulfonated oil cleansers.

FORMULA 10

| | Per Cent |
|---|---|
| Sulfonated olive oil | 50-60 |
| Light liquid petrolatum | 40-50 |
| Gelatin, 25 per cent aqueous solution | 10 |

FORMULA 11

| | Per Cent |
|---|---|
| Sulfonated olive oil (55 per cent) | 70 |
| Light liquid petrolatum (45 per cent) | 70 |
| Sulfonated neat's foot oil | 20 |
| Gelatin, 25 per cent aqueous solution | 10 |

FORMULA 12

| | Per Cent |
|---|---|
| Sulfonated neat's foot oil | 45 |
| Light liquid petrolatum | 45 |
| Gelatin, 25 per cent aqueous solution | 10 |

FORMULA 13

| | |
|---|---|
| Formula 12 | 2 parts |
| Sodium lauryl sulfate, 20 per cent solution | 1 part |

### OIL FOLLICULITIS AND DERMATITIS [8]

In our accelerated war program among the most prevalent and troublesome dermatoses are those caused by cutting oils, cutting compounds and lubricants. It is impossible for metal workers and machinists to operate without cutting oils and compounds, because these products are necessary to lubricate moving parts, to keep

8. O'Connell, W. J.: Pub. Health Rep. **37**: 1773 (July 21) 1922. Schwartz, Louis, ibid. **56**: 1947 (Oct. 3) 1941.

the cutting edges cool and to prevent rust. The lubricating oils and greases are usually petroleum derivatives. The cutting oils may be of animal, vegetable or mineral composition or may be combinations of such oils. Animal oils, such as lard oil, are more satisfactory for this purpose than petroleum oils but they are much more expensive, while both animal and vegetable oils break down at high temperatures. Mineral oils also have less viscosity; mixtures of these oils are therefore most commonly used. Cutting oils are further subdivided into the straight or insoluble oils and the soluble oils or cutting compounds. The latter are sulfonated oils, soap oils and phenolated oils diluted with water in variable proportions. The sulfonated oils are produced by treating petroleum oils, castor oil, cottonseed oil or olive oil with sulfuric acid and neutralizing the excess acid with sodium carbonate, sodium hydroxide or an alkali. The soluble cutting oils are mixtures of sulfonated mineral oil and saponifiable vegetable or animal oils, which, when mixed with water, form creamy emulsions. Phenolic compounds and alcohol may be added to vegetable or animal oils to prevent them from becoming rancid and for sterilization. Sometimes the oils are sterilized by heat. The addition of sulfur or chlorine to vegetable or animal oils is thought by some to increase film strength and thus to increase lubrication of the cutting edges. Used oil may be reclaimed by sterilization and filtration, straining or centrifugation.

This brief description of cutting oils and mixtures will serve to indicate the potentialities for dermatitis and the desirability of information regarding the kind of oil being used when attempting to combat dermatitis. The opinion has been expressed that dermatitis of the venenata type may be caused by the sulfur or chlorine content, which may be as high as 5 to 10 per cent in some cutting compounds, or by the alleged defatting effect of some mineral oils. Klauder states that pure mineral oil, free of volatile distillates, does not have a "defatting" action. The fatty oils, which may total 30 per cent of a mixture, may consist of oleic acid, lard, fish or vegetable oils. Dermatitis venenata from such sources is, however, comparatively infrequent as contrasted with follicular dermatitis, papules, pustules, furuncles and comedones.

Phenols, cresols and phenolic amines present in small quantities as inhibitors, and the animal or vegetable oil components, may be the cause of sensitization dermatitis. The cleansers used after work with cutting oils may likewise be the cause of dermatitis, instead of the oil or one of its ingredients. The drying and cracking of the skin resulting from the defatting action of the mineral oil content may predispose to dermatitis from sources other than the oil. Cutting oil dermatitis of the allergic variety is usually a diffuse erythematous process associated with edema and later with desquamation, but it may exhibit fine vesiculation and at times papulation.

As already stated, the commonest type of skin disorder in this field is the folliculitis that follows plugging of hair follicles with oil or grease and dirt. This occurs particularly on the extensor surfaces of the hands and forearms and also quite frequently on the anterior surfaces of the thighs and knees. These skin surfaces are studded with little black dots, indicating the plugged follicles, and among them are scattered inflammatory papules and pustulopapules and occasional furuncles. Ordinary nonindustrial folliculitis and furunculosis do not exhibit this profuse follicular plugging or the characteristic localization of folliculitis observed in the industrial cases.

Schwartz and Barlow[9] have investigated and described an acneform dermatitis similar to previously reported chloracne and attributed by them to chlorinated cutting oils. These lesions are chiefly on the face and neck of workers exposed to a fine oily mist produced in heavy cutting and grinding operations. In a single large motor factory with 20,000 employees, 100 cases of dermatitis a month were observed over a six month period shortly after a change had been made in the gear cutting oils used for certain operations. Most of the cases were instances of oil folliculitis and furunculosis of the extremities but they included numerous instances of acne-like facial eruptions, exhibiting the straw colored cystic lesions observed in chloracne. Microscopic examination showed follicular hyperkeratosis and pseudocystic dilatation of follicular openings. Similar cases were observed in several other factories using the same gear cutting oils at similar operations. The offending oils were petroleum oils containing fatty animal oils in combination with 5 per cent chlorine and 6 per cent sulfur, which is a higher percentage of chlorine than in most chlorinated oils. Investigation disclosed also that about 25 per cent of the chlorine was given off in the grinding operations. A return to the oils previously used resulted in a prompt subsidence in the incidence of these eruptions.

Some oils stimulate keratinization and cause the formation of horny plugs, keratoses and papillomas. Epithelioma formations may occur but are rare. Fine metal particles in used oil and in cotton waste and rags may scratch and abrade the skin, predisposing to both dermatitis and infection. The infection, which is staphylococcic or streptococcic, is usually acquired from shop dirt and cleansing rags and clothing or by autoinoculation and is less frequently attributable to the oils and cutting mixtures.

The prevention of cutting oil dermatitis and folliculitis is chiefly a matter of personal cleanliness of skin and clothing, and this can be facilitated by the provision at work of adequate washing facilities, showers and clothes lockers and by instruction of employees in the importance of their use. At certain types of work sleeves and aprons of material impervious to oil may be worn. If individuals with abnormally dry skin must be kept at such work a protective application of a hydrous wool fat and castor oil mixture may be applied before work. Schwartz, Warren and Goldman[10] recommend aprons and sleeves treated with oil resistant synthetic resins and the use of a skin cleanser of neutral sulfonated castor oil containing 2 per cent fatty alcohol sulfate. Two per cent trisodium phosphate and sodium hexametaphosphate may be added to this mixture for additional cleansing and water softening properties. If protective ointment or creams are desired it is best to use preparations made with vegetable or animal fats that will not act as "degreasers" and containing wetting agents to render them more easily removable by soap and water.

208 East Wisconsin Avenue, Milwaukee.

9. Schwartz and Barlow: Chloracne from Cutting Oils, Dermatoses Investigation Section, Division of Industrial Hygiene, National Institute of Health, U. S. Public Health Service.

10. Schwartz, Louis; Warren, L. H., and Goldman, F. H.: Pub. Health Rep. **55**: 1158 (June 28) 1940. Schwartz, Louis, ibid. **56**: 1788 (Sept. 5) 1941.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 5, 1943

## THE MENACE OF TYPHUS IN EUROPE

Of the communicable diseases that may become epidemic in wartime, typhus is of most concern. In his comprehensive summary of the typhus situation in Europe and North Africa, Biraud [1] of the Epidemiological Intelligence Service Health Section of the League of Nations points out that typhus is on the increase in the countries of eastern Europe in which the disease usually is endemic, in Spain and in North Africa, and that it has appeared in sporadic forms in regions of central and western Europe hitherto free from the disease. In eastern Europe typhus is not as widespread as at the end of the first world war. In the West Biraud does not regard the danger of typhus serious "so long as the population continues on the whole to be free from lice," but increasing economic disorder and destitution may result in spread of the disease.

The spread of European typhus, which is the only form of typhus now considered, depends on the presence of the virus and its vector, the body louse, in a receptive population. The special means to prevent the invasion and extension of typhus are delousing and vaccination. In delousing, the people who are most exposed to the infestation come first—vagrants, refugees, the poor—but under certain conditions delousing of military as well as civilian communities may be required.

Biraud has made a valuable study of the respective advantages and indications of antityphus vaccines, killed and live. Generally speaking, killed vaccines, which are given in three injections a week or so apart and which act rather slowly, are best suited for the protection of medical and sanitary personnel and in limited outbreaks in regions where the population in general is stable and free from lice; in other words, when rapid protection is not required. But in outbreaks in shifting and lousy populations, in troops and refugees, live vaccines are best because protection is quickly induced by a single injection. In endemic regions preference should be given, if possible, to vaccines of multiple local strains of the virus; in countries free from typhus but threatened, it would be best to use vaccines of virus from the regions whence the invasion may be anticipated. Biraud states that as regards live vaccines "the new method of Blanc (biliated flea virus) and that of Laigret-Durand (mouse brain virus) are the only ones that can be considered in the preparation of vaccines intended for Europeans. . . ." With both these methods quantities needed for mass vaccination can be produced and both have given good results in the suppression of epidemics in North Africa. Mass vaccination broke the typhus waves in Morocco in 1937-38 and in Tunis in 1939-40. In Tunis, where 200,488 vaccinations were made with the mouse virus, not a single case of vaccinal typhus was observed. Biraud concludes that modern antityphus vaccination coupled with delousing can protect Europe against the present menace of epidemic typhus. From reports at hand it appears that so far American military forces in North Africa have escaped typhus, which is still a menace to the civilian population.[2]

1. Biraud, Yves: The Present Menace of Typhus Fever in Europe and the Means of Combating It, Bull. Health Organ., League of Nations **10:** 3, 1943.

2. American Soldiers Escape Typhus, J. A. M. A. **122:** 236 (May 22) 1943.

## SULFONAMIDE FASTNESS

Three years ago Woods [1] suggested that acquired resistance of pathogenic micro-organisms to sulfanilamide is due to their acquired power to synthesize unusually large amounts of p-aminobenzoic acid, a metabolic product known to inhibit sulfanilamide activity. This theory could not be verified experimentally at the time because of the lack of a reliable quantitative test for the minute quantities of p-aminobenzoic acid formed by pathogenic bacteria. Since then Landy and his colleagues [2] at the Army Medical School, Washington, D. C., have developed a microbiologic technic for such determination. They have applied the new technic to a study of p-aminobenzoic acid synthesis by sulfonamide resistant micro-organisms.[3]

Two different strains of Staphylococcus aureus were made resistant to sulfonamides by exposure to increasing concentrations of sulfathiazole. The adapted strains, together with the nonresistant parent cultures, were

1. Woods, D. D.: Brit. J. Exper. Path. **21:** 74 (April) 1940.

2. Landy, Maurice, and Dicken, Dorothy M.: J. Biol. Chem. **146:** 109 (Nov.) 1942.

3. Landy, Maurice; Larkum, N. W.; Oswald, Elizabeth J., and Streightoff, Frank: Science **97:** 265 (March 19) 1943.

then transferred serially to a p-aminobenzoic acid free culture medium.[4] Plate cultures revealed an equal proliferation of the adapted and parent strains in this medium. Equal inoculums of the four cultures were then transferred to 50 cc. volumes of p-aminobenzoic acid free medium. The subcultures were then incubated for twenty-four hours and afterward passed through a Seitz filter. After autoclaving, the resulting filtrates were titrated for p-aminobenzoic acid by the Landy technic with parallel crude assays by routine colorimetric methods, crystalline p-aminobenzoic acid being used to prepare the color scale. The average p-aminobenzoic acid formed by the two sulfonamide susceptible parent strains was 0.049 microgram per cubic centimeter. The sulfonamide resistant strains synthesized an average of 3.61 micrograms per cubic centimeter, a seventyfold increase over the p-aminobenzoic acid synthesis by the susceptible parent cultures. The quantity of p-aminobenzoic acid synthesized by the adapted cultures is thus considerably in excess of the minimum amount required to suppress the inhibitory action of the quantity of sulfonamide to which these organisms are resistant.

Sulfonamide adapted staphylococci continue to synthesize this seventyfold excess of p-aminobenzoic acid for many generations after transfer to usual culture mediums. The seventyfold synthesis occurs both in the absence and in the presence of sulfonamides. The acquired sulfonamide fastness is thus a stable hereditary character in these adapted micro-organisms.

Landy and his colleagues believe that development of ability to synthesize excessive amounts of p-aminobenzoic acid fully explains the acquired sulfonamide fastness of staphylococci. With other bacterial species, however, acquired sulfonamide resistance is not associated with such increase. Nonresistant parent strains of Escherichia coli, Vibrio cholerae, Bacterium dysenteriae and Klebsiella pneumoniae, for example, secrete on an average only 0.033 microgram per cubic centimeter, the same average being shown by sulfonamide resistant variants of the same species. The latter result is of particular clinical interest, since it shows that a successful method of overcoming the sulfonamide fastness of staphylococci would not necessarily be effective with other pathogenic bacteria. The method of "resensitizing" or overcoming sulfonamide resistance in staphylococci by the use of urea, for example, which was recently proposed by Tsuchiya and his colleagues [5] of the University of Minnesota, would not necessarily be effective with other bacterial species.

4. Landy, Maurice, and Dicken, Dorothy M.: J. Lab. & Clin. Med. **27**: 1086 (May) 1942.
5. Resensitization of Sulfonamide Fast Bacteria, editorial, J. A. M. A. **121**: 680 (Feb. 27) 1943.

## *Current Comment*

### COLOR BLINDNESS

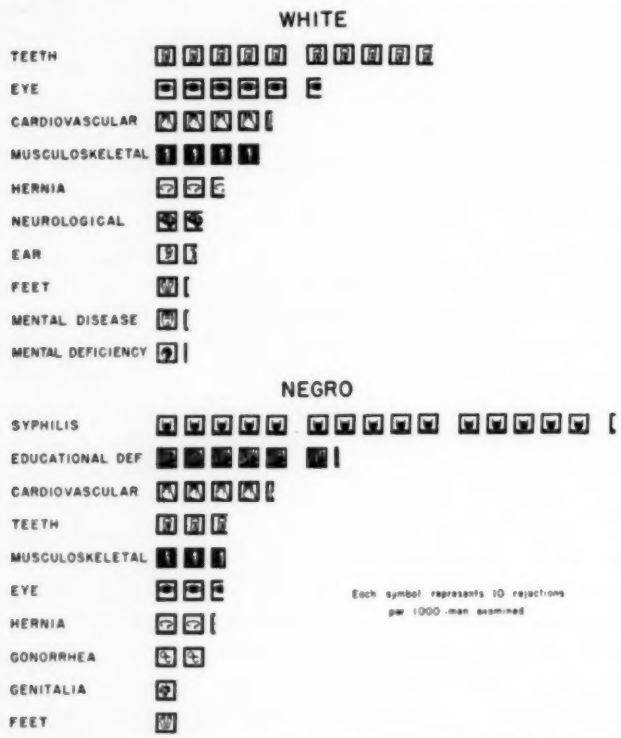
In THE JOURNAL for March 20 reference was made to an alleged cure for color blindness said to have been devised by one J. H. Lepper, optometrist, of Mason City, Iowa. Subsequent to the publication of that statement, Lepper sent to THE JOURNAL a communication in which he insisted that he does control color blindness in from fifteen to twenty days so that boys who followed his methods passed government tests. He submitted complete instructions as to the technic that he uses, some special lenses which are used as a part of the procedure, and a list of men now in the Navy and in the Air Force who had previously been rejected but were accepted after having followed his technic. The material concerned was referred to appropriate agencies in Washington, which verified the information supplied by Lepper as to the men who had been rejected and later accepted following his attention. Investigators then visited certain optometrists in the eastern part of the United States who follow the Lepper technic and studied their results. These investigators believe that Lepper is conducting an educational rather than a therapeutic process. In his technic the subjects are instructed to get some one with normal color vision to assist them and to trace the shapes of the figures carefully even in those charts in which they can see the figures fairly well. They are instructed to continue working on harder and harder charts and to keep daily records of the charts which they can read and those which they cannot read. Thus the person concerned builds a learning curve and with sufficient time masters the color manual thoroughly. It seems quite likely that those with disturbances of color vision do fix in their minds appearances which are associated with certain colors when viewing objects that have for them some familiarity. No doubt reexamination of these individuals at a later date, using a different technic, would reveal that the persons concerned are still color deficient, although they did learn enough about the test ordinarily used to pass that test and thus enable them to enter military service. Obviously, it is for the services themselves to determine whether or not the tests for color blindness now used are sufficient, in view of the possibilities of learning, to screen out enough persons who are color deficient or whether or not the young man who is willing to put in the necessary time in an educational process to learn enough about the tests to enable him to pass them would not qualify because of superior learning ability or intelligence to meet the needs of the armed forces. The optometrists who are now specializing in the Lepper technic might limit their promotion of the method to the statement that they teach men to pass the tests for color vision and avoid carefully the use of the word "cure" in any relation to color blindness.

## OSGOOD NUMBER OF ARCHIVES OF SURGERY

The May 1943 issue of the *Archives of Surgery* is dedicated to Dr. Robert B. Osgood, professor emeritus of orthopedic surgery at the Harvard Medical School. Dr. Osgood has been closely associated with developments in orthopedic surgery and in arthritis since 1899. He has a host of former students and friends, many of whose contributions appear in this special number. This timely recognition is a well merited testimonial to the ideals which have animated a long and useful career in medical science.

## "SYPHILIS IN THE UNITED STATES PRIMARILY A NEGRO PROBLEM"

Elsewhere in this issue appears an article by W. G. Smillie of the Department of Public Health and Preventive Medicine, Cornell University Medical College, which emphasizes the fact that the incidence of syphilis among white men in the greater part of the United States is low and that it is limited for the most part to the lowest classes of society. Thus it has become among the whites a disease largely of the ignorant, the careless, the criminal and the social outcast. Syphilis is, however, more than ten times as prevalent in Negro as in white persons. Smillie feels that emphasis should be placed on the high prevalence of syphilis in the Negro and that the attack on the disease should be guided by this factor. In recent studies of the 18 and 19 year old registrants, figures were assembled which indicate that the rate of incidence of syphilis among whites for each hundred examined was 0.2, while for the Negro the rate for the 18 and 19 year old group was 11.2 per hundred examined. Thus for the Negro group syphilis ranked second, following an incidence of 12.2 for educational deficiency, whereas in the white group syphilis does not appear in the first ten causes of rejection.




Leading causes of rejection at Selective Service local boards, November 1940 through September 1941 (chart supplied by the Selective Service System).

## TRUE AND FALSE AMNESIA

As used medically, the term amnesia means temporary rather than permanent loss of memory. Three main causes or types of amnesia, according to Lennox,[1] may be recognized: pathologic, physiologic and feigned. Pathologic amnesia is used to cover those cases in which the amnesia is associated with and presumably caused by abnormal structure or physiology of the brain. This would include amnesia caused by such agencies as sudden injury, acute toxemia, excessive use of narcotics and alcohol. Epilepsy is the medical condition in which periods of amnesia most frequently occur without apparent warning. The types of epileptic seizures sometimes known as psychic, psychic equivalent, psychic variant, fugues, automatisms, paroxysmal mania or epileptic insanity are frequently the most difficult to identify because previous manifest attacks have been often absent. Psychologic amnesia is due to a disturbance of normal psychologic processes or reactions. It arises most often out of some emotional blockage. Unlike the epileptic patient who expresses concern, chagrin and bewilderment over a past period of amnesia, the psychoneurotic seems little perturbed by the fact that all memory is gone. Occasionally amnesia is simulated in an effort to escape some unpleasant duty. In cases of feigned amnesia the identifying features of pathologic and psychologic amnesia should be absent; a normal electroencephalogram is presumptive evidence against a plea of epileptic amnesia. In addition to the electroencephalogram, the recently developed use of phenytoin sodium may provide a therapeutic diagnostic agent of considerable aid in the cause of justice whenever the claimed amnesia is related to a criminal act. This drug is of proved value in the control of psychomotor seizures. If unexplained acts of violence with amnesia are in the nature of epileptic seizures, the successful use of this drug would tend to establish the cause of the behavior and might alter the prospects for long term imprisonment. As pointed out by Lennox, however, the electroencephalogram has certain limitations: about 15 per cent of epileptic patients have a normal brain wave record and about 15 per cent of normal persons have an abnormal brain wave record. Even though this is true, in those cases in which an illegal act is the result of a period of amnesia which in turn is accompanied by a disorder of the electrical waves of the brain, treatment by means of medicine instead of by incarceration seems reasonable. More information on this point, Lennox says, is urgently needed.

1. Lennox, W. G.: Amnesia, Real and Feigned, Am. J. Psychiat. **99**: 732 (March) 1943.

# MEDICINE AND THE WAR

*In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war and such other information and announcements as will be useful to the medical profession.*

## ARMY SPECIALIZED TRAINING PROGRAM FOR MEDICAL AND PREMEDICAL STUDENTS

At present it is contemplated that training in medicine, dentistry and veterinary medicine will be initiated in all approved schools by July 14. The dates correspond as far as possible to the beginning of a new term except in the schools in which an academic period starts after July 15; in these cases it is asked that the program be initiated at the first of the month.

Baylor University School of Medicine is being omitted until further notice, as is the Harvard School of Dental Medicine (in contradistinction to the Harvard Dental School).

Students in these schools who are called to active duty or are inducted through Selective Service will be assigned with the least possible delay to the unit at the school in which currently enrolled. Preprofessional students who have completed their preparatory training and who have been accepted for matriculation by approved schools are considered as professional students. They will not be required to accomplish their basic military training at the expense of their professional training.

Other preprofessional students, however, with the exception of those in the Enlisted Reserve Corps and those who enter the Enlisted Reserve Corps through induction prior to the end of their current term which ends prior to June 30, 1943, must receive their basic military training prior to assignment to the Army Specialized Training Program if they are inducted later. Since this three months interruption of preprofessional training may mean incomplete preparation for the vacancy for which accepted by an approved school, full advantage in these cases should be taken of eligibility for deferment under Selective Service. If at the completion of their academic preparation they are inducted, either before or after entering medical school, they will be assigned to the unit at the school by which accepted.

Instructions have been issued which will place the responsibility of getting the soldier who requires no more premedical training to the unit at the school by which he has been accepted on the service command commander and the dean of the accepting school. Complete information regarding accepted matriculants will enable the local service command to issue the necessary orders to effect timely assignment of enlisted men residing or stationed in his command to the appropriate unit. He will also request the transfer to the unit in his command from other service commands if necessary.

Medical schools have not yet been asked to mortgage vacancies in the freshman classes to the Army Specialized Training Program. It is hoped, however, to negotiate such assurances for late 1944 if premedical training of enlisted men other than those already accepted is to be undertaken. The Army will want 55 per cent of freshmen vacancies, the Navy 25 per cent.

The decision of the Navy that all its medical and dental trainees will receive commutation of quarters and rations complicates the situation, as does the fact that Navy trainees will wear double breasted blue sack suits while the medical student in the Army is clothed in khaki. No one complains that the Navy will not permit its bachelors to acquire a dependent.

The question of quarters and rations is causing great distress among many deans. The present ruling is that Army Specialized Training Program trainees at schools of dentistry, medicine and veterinary medicine will be placed on commutation of rations and quarters when it is manifestly impossible for each institution concerned to provide from its own resources or by lease or contract adequate housing and messing facilities. This puts the entire local problem in the hands of the service command and the dean.

There is a wide variation in textbooks and instruments required. The Army will purchase them through the institution for reissue as required. Tuition is being considered on the basis of nonresident tuition. Various fees such as matriculation and graduation will not be covered: the soldier must pay for his own diploma. Breakage is a government responsibility and, if due to neglect or misconduct, will be deducted from the soldier's pay.

### Questions and Answers

Q. How may medical or dental students who are now deferred by Selective Service get into the Army Specialized Training Program? A. Students in good standing in accredited medical or dental schools who are now deferred by Selective Service may request reclassification and voluntary induction by their local boards for the purpose of induction and assignment to the Army Specialized Training Program. At the time of induction, such students should have in their possession letters from the deans of their colleges certifying that they are medical or dental students in good standing. If they are inducted in this manner before the end of the current term, they will be transferred to the inactive reserve and not ordered to active duty until the end of the current school year, at which time it is expected that the Army Specialized Training Program will be operative.

Q. How may premedical or predental students who have been accepted for admission to accredited medical or dental schools and who are now deferred by Selective Service get into the Army Specialized Training Program? A. Prior to the end of the current term not later than July 1, 1943 the procedure will be the same as outlined for medical or dental students. Those who enter the Army through Selective Service after July 1 will be required to take thirteen weeks of basic military training before they are eligible for assignment to the Army Specialized Training Program.

Q. What will be the status of premedical or predental students who are not enlisted reserves by July 1? A. Students not in any Army or Navy Reserve by July 1 may (1) be inducted by Selective Service, as just suggested, in which case they must be prepared to interrupt their college work for basic military training or (2) be continued under deferment by Selective Service until they are medical students, at which time they may be inducted and assigned to an Army Specialized Training Program unit to continue their professional training without the necessity of interruption for basic military training.

Q. Will resignations of Medical Administrative Corps commissions for purposes of induction and assignment to the Army Specialized Training Program be accepted after May 1? A. No time limit has been set for such resignations or enlistments. They will be accepted at any time.

Q. When, where, and how will students who resign Medical Administrative Corps commissions enlist? A. Instructions regarding enlistment are being made by the respective service commands. If such instructions have not been received by the deans, inquiry concerning them should be made without delay.

Q. Will resignations of Medical Administrative Corps commissions be approved for the purpose of enlistment in the Navy College Program? A. No.

Q. Will subsistence allowances be made to medical students on active duty on the Army Specialized Training Program? A. Only in situations in which it is impossible or unpractical to provide group housing and/or necessity. No blanket authorization has been issued for the provisions of subsistence allowances. Each request by a medical or dental school for subsistence allowances for its students will be considered as a special case.

# ARMY

## ALLIED PAPUAN MEDICAL SOCIETY

*(From a Correspondent Somewhere in New Guinea)*

With principal discussions centering around medicine as it is applied and practiced in connection with aviation, members of the Allied Papuan Medical Society held their regular monthly meeting here recently. The society, now in its fifth month, includes in its membership all doctors of this area. Hosts for the meeting were flight surgeons of the various Air Force units. Special guests included commanding officers of all Allied Air Force units and nurses from the staffs of the Australian and American hospitals.

Speakers were introduced by Lieut. Col. Reynolds D. Smith, president of the society, and topics, with speakers, included "Aviation Medicine in Combat" by Col. Bascom L. Wilson, "Moral Fiber" by [censored] Keith Harrison, "Fear" by [censored] C. P. Markle, "The Fighter Pilot" by [censored]. J. H. Grammer and "Medical Air Service" by [censored] B. A. Donnelly.

The speaker's rostrum was flanked by exhibits which covered almost every phase of aviation medicine, assembled and displayed for the occasion by the medical departments of the Air Corps units represented. Of particular interest was a malaria exhibit which graphically presented the life cycle of mosquitoes common to this area. Microscopes were set up for study of the minute details, and live fish of the genus Gambusia were on exhibition devouring larvae.

Striking a comparison between Japanese and Allied equipment was a complete display of Japanese surgical instruments and appliances, with many of their drugs and much of the first aid equipment used in combat zones. All items were displayed on the brightly colored and highly decorated cloth used by the Japanese to barter with the natives. A portable x-ray machine, complete, which can be disassembled, placed in small packing cases and transported in a medium sized plane, was demonstrated. Included in the display was a complete flight surgeon's examining unit. Group and squadron aid stations were shown, plus latest type crash trucks and rescue paraphernalia. Conveniently placed for inspection near the "auditorium" was a C-47 transport converted into a hospital ship. Also shown were various types of oxygen tanks and masks, field oxygen equipment, jungle parachutes, back packs and seats containing one man collapsible boats. Lending realism to a display of the different types and sizes of bombs were actual photographs of their destructive powers.

The March monthly meeting had as its topic "Scrub Typhus." The subject for May will be "War Surgery."

To the doctors in the United States we extend a cordial welcome.

## FIVE PHILIPPINE OFFICERS GRADUATE AT CARLISLE BARRACKS

Among 408 medical department officers who graduated from the Medical Field Service School at Carlisle Barracks, Pennsylvania, on April 8, 5 were from the Philippine Islands: Major Emigdio C. Cruz, a member of President Quezon's staff, and First Lieuts. Gregorio P. Chua, Francisco J. Roman, Irineo E. Pantangco and Jose Willie, the first 3 of whom served with the American Red Cross in the Philippines and helped bring out from Manila on a Red Cross hospital ship 246 wounded; when these officers arrived in California they were commissioned in the U. S. Army Medical Corps.

## GENERAL SIMMONS TO LECTURE ON PUBLIC HEALTH AT YALE

Brig. Gen. James S. Simmons, chief of the Division of Preventive Medicine in the Office of the Surgeon General, has been appointed visiting lecturer in public health by Yale University School of Medicine, New Haven, Conn., for the coming year, the War Department announced on May 22. This will be in addition to his Army duties. General Simmons is also visiting lecturer in preventive medicine at the Johns Hopkins University Medical School, Baltimore. Known principally for his work in bacteriology and preventive medicine, he has conducted laboratory and field investigations on malaria, yellow fever, typhus, meningitis, typhoid, encephalitis and other diseases. General Simmons received his doctor of philosophy degree from the George Washington School of Medicine in 1934 and his doctorate in public health in 1939 from Harvard University. He is a member of the National Malaria Committee, the Medical Division of the National Research Council, the Committee on Medical Research of the Office of Scientific Research and Development, the Advisory Council to the Health and Sanitation Division of the Institute of Inter-American Affairs and the Health Committee of the Office of Foreign Relief and Rehabilitation.

## NURSES' AIDES FOR ARMY HOSPITALS

Volunteer nurses' aides trained under the joint program of the Office of Civilian Defense and the American Red Cross may now be used in army hospitals. The Surgeon General of the Army has requested this service, and the sponsoring agencies have recommended that Nurses' Aides be assigned to army general or station hospitals on request of the commanding officer of the hospital. The aides must receive their training in civilian hospitals as heretofore, however, and service in army hospitals must not interfere with supplying aides to civilian hospitals and health agencies both now and in the event of enemy action, according to Medical Circular No. 28, issued by Dr. George Baehr, Chief Medical Officer, Office of Civilian Defense. This proposed extension of the services of nurses' aides emphasizes the need for increased effort in recruitment in localities which have not yet participated in the program.

## RATINGS OF ENLISTED MEN

The following War Department radiograms are quoted in part:

"All enlisted men finally selected for assignment to advanced courses Army Specialized Training Program will be assigned thereto in grade. Enlisted men finally selected for assignment to basic courses, Army Specialized Training Program, will be assigned thereto in grade 7."

"All students accepted from civil life, under the present plans, will be enlisted men (privates) while participating in the Army Specialized Training Program. Enlisted men holding ratings and accepted for advanced courses at Army Specialized Training Units must accept a reduction to qualify for the training. Those who accepted a reduction in grade will be restored immediately to the grade held at the time of selection without loss of seniority. Restoration to grade is not retroactive for pay purposes."

# NAVY

## CIRCULATING LIBRARY OF MOTION PICTURES

A circulating library of medical motion pictures has been established by the Section of Audio-Visual Education, Division of Preventive Medicine. Bumed in cooperation with Training Film Unit of Buaer is sponsoring the production and procurement from outside sources of motion pictures and film strips of interest to naval medical personnel. Since it is impossible to furnish copies of these films to all naval activities for their film libraries, prints of films are being forwarded to the commandant of each naval district. District medical officers are required to arrange for routing and scheduling the films in their district. Fleet medical personnel temporarily ashore will be afforded an opportunity to see the films, as no method of distribution to the fleet seems feasible at present. A list of medical films now available may be obtained on request to Comdr. J. S. Barr of the Section of Audio-Visual Education, Bureau of Medicine and Surgery, U. S. Navy, Washington, D. C.

## SHORTEN NAVY TRAINING COURSES

A new educational program for the Navy Hospital Corps, designed to standardize and shorten all training courses, has been prepared by the Bureau of Medicine and Surgery. The increasing tempo of the war has greatly expanded the demand for members of the Hospital Corps, who serve aboard ships at sea, in continental and overseas hospitals and with Marine units. The new training program will enable the Corps to provide fully qualified men more rapidly.

Training for members of the Hospital Corps is divided into two classifications, basic training for men with no previous professional training, and advanced courses for men of professional experience. The basic training period has been cut from a normal, peacetime length of four months, to a course of five weeks. The advanced course for officers has been reduced from one year to six months, while advanced courses for enlisted personnel have been shortened from one to three months, depending on the subject.

While the revised training courses will require less time in the class rooms, thus permitting men to join the fighting units more quickly, they have been designed so that no essential training is omitted.

## NAVAL MEDICAL CORPS NEWS

Edward A. Strecker, M.D., professor of psychiatry at the University of Pennsylvania School of Medicine, Philadelphia, and president of the American Psychiatric Association, and James E. Paullin, M.D., professor of clinical medicine at Emory University School of Medicine, Atlanta, president of the American College of Physicians and President-Elect of the American Medical Association, have been appointed members of the Board of Honorary Consultants to the Surgeon General of the Navy.

Lieut. (jg) Chester L. Gutherie, U.S.N.R., has reported to the Bureau of Medicine and Surgery and been assigned to the Office of Special Assistant to the Surgeon General; he will continue with the current conversion of files and other work on record administration problems in the Medical Records Section.

Capt. Robert F. Sledge, MC, U.S.N., reported to the Naval Medical School, Washington, May 7, as executive officer.

Ens. Dorothy G. Miller, W-V (S) U.S.N.R., reported to the Bureau of Medicine and Surgery and has been assigned to the section of Legal Medicine in Division of P. Q. & M. R.

Lieut. Lawrence E. Schuster, MC, U.S.N.R., reported to the Bureau of Medicine and Surgery and has been assigned to P. Q. & M. R.

Lieut. (jg) Hazel M. Grainger, W-V (S), U.S.N.R., reported to the Bureau of Medicine and Surgery and has been assigned to the dispensary.

During the month of April 239 appointments of medical officers and officers in class H V(S) and W-V(S) coming under the cognizance of the Bureau of Medicine and Surgery were accomplished.

Over 100 lieutenants (jg), MC V(G), U.S.N.R. who have completed nine months of intern training in civilian hospitals have been assigned to duty in naval hospitals for an additional period of three months of intern training prior to becoming available for general assignment.

The Hahnemann Medical College and Hospital of Philadelphia has been designated as an institution to which medical officers will be assigned for training in anesthesia. This is in addition to the facilities offered medical officers for training in this specialty at the Mayo Clinic, Rochester, Minn., and at the Lahey Clinic, Boston.

There are at this time 56 medical officers under training in psychiatry and neuropsychiatry at the Naval Hospital, Bethesda, Md., and at the Naval Hospital, Philadelphia.

The next basic indoctrination course of instruction at the Naval Medical School, Bethesda, Md., will be convened in the latter part of June for 40 lieutenants (jg), Medical Corps, U. S. Navy and U. S. Naval Reserve.

A large number of medical officers of the regular Navy and of the Naval Reserve have been placed under orders for the next classes being assembled at the Naval Air Station, Pensacola, Fla., for training in flight surgery and the course leading to the designation aviation medical examiner.

Medical officers who are interested in training in psychiatry, neuropsychiatry, pathology and laboratory procedures are urged to apply for such training.

## LIFE INSURANCE FOR NAVAL PERSONNEL

It is now possible for all naval personnel, regardless of date of entry into active service, to apply for National Service Life Insurance without a physical examination. This opportunity will be available up to Aug. 12, 1943. Personnel of the Navy as a whole are insured only to the extent of about 85 per cent, with a policy average of $7,500. As this form of insurance coverage is for the benefit of each member of the naval service, it is the desire of the Secretary of the Navy that every person be covered by the maximum amount of this insurance provided for them by act of Congress.

## AUSTRALIA BUILDS HOSPITAL FOR CARE OF AMERICAN SERVICEMEN

According to the New York *Times*, the Office of War Information reported that the government of Australia under its program of reciprocal lend-lease has built a ten story hospital for the use of American soldiers, sailors and marines recuperating from wounds or illnesses suffered in the Pacific. The hospital was built at a cost of about $3,000,000, but its transfer to the American forces entails no payment. The exact location of the center has not been revealed.

## LIEUTENANT BERLEY A JAPANESE PRISONER

Mr. and Mrs. Guy Berley, 4153 Congress Street, Chicago, have been informed by the navy department that their son, Lieut. Ferdinand Victory Berley, 30 years old, a navy doctor, is a prisoner in the Philippines. Lieutenant Berley had been reported missing since the fall of Corregidor. Earlier he had been stationed at Shanghai, China, and Cavite, in the Philippines, being transferred from a Cavite hospital only a day before Japenese bombs destroyed it. Lieutenant Berley graduated from Northwestern University Medical School in 1939.

## THE NAVAL HOSPITAL FUND

Legislation has been proposed to abolish the time honored Naval Hospital Fund. The bill establishing the Naval Hospital Fund was signed by President John Adams on July 16, 1798, the provisions of which authorized the familiar deduction of $0.20 per month from the pay of officers and men of the Navy and Merchant Marine Service. Hearings before the Senate and House Committees on Naval Affairs have been held and both committees have acted favorably.

# MISCELLANEOUS

## WARTIME GRADUATE MEDICAL MEETINGS

The series of wartime graduate medical meetings under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons has been previously discussed in THE JOURNAL (April 24, p. 1399; May 1, p. 45). A series of tentative programs has already been prepared, each of them to consist of a six hour schedule of three two hour sessions.

The program on orthopedic surgery is under the direction of Dr. George E. Bennett and Dr. Frank D. Dickson, who will serve as national consultants. The program will present the orthopedic features of diseases and injuries of the spine, deformities of the joints, shoulder lesions, the feet, knees and fractures.

The program on human nutrition and Nutritional Deficiency Diseases is under the direction of Dr. John B. Youmans. The program is to include the functions of various nutritive principles, the sources of nutritive principles and factors affecting intake and storage, and diagnosis and treatment of nutritional deficiency diseases.

The national consultant for tuberculosis is Lieut. Col. Esmond R. Long. The program includes discussions of tuberculosis as a wartime problem, methods of examination, diagnosis and case finding, and evaluation of treatment and prognosis.

Allergy will be given under the direction of Dr. Robert A. Cooke. It is to include fundamentals of allergy, problems in diagnosis and treatment of bronchial allergy, asthma, miscellaneous allergies and nasal allergy, including hay fever and perennial allergy.

The national consultant for malaria is Dr. Henry E. Meleney. The program involves a review of the importance of malaria in world health and economy and in war, malarial parasites of man, clinical malaria and the epidemiology, prevention and control of malaria.

Gastrointestinal disease is to be given under the direction of Dr. Walter L. Palmer. The tentative first day two hours' program is to be devoted to peptic ulcer, its incidence, symptomatology, x-ray diagnosis, gastroscopy and treatment. The second day's program is to review the complications of ulcer and acute and chronic gastritis. The final two hours are to be devoted to functional digestive disorders and to diets for gastrointestinal patients in a military hospital.

The national consultants on clinical psychiatry are Dr. Edward A. Strecker and Dr. Arthur H. Ruggles. The tentative program will include selection of personnel at induction, neuropsychiatric problems during the training period and combat neuropsychiatric problems.

Cardiovascular problems will be under the direction of Dr. William D. Stroud. This tentative program emphasizes the desirability of each local committee arranging its own program according to the talent available, and the use of lantern slides and moving picture films when possible. A discussion of borderline physical findings in normal cardiovascular systems is suggested as desirable. Other suggestions include a discussion of neurocirculatory asthenia, the diagnosis, treatment and prognosis in coronary artery disease and peripheral vascular disease.

Rheumatism and arthritis have Dr. Ralph Pemberton as national consultant. The program is to include general orientation, clinical aspects of the principal varieties and discussions of treatment.

The national consultant for anesthesia is Dr. John S. Lundy. Consideration is to be given to fundamentals of anesthesia, inhalation anesthesia, including preliminary medication and intravenous, rectal, local, regional and spinal anesthesia.

Neurology is under the direction of Dr. Tracy J. Putnam. The subjects selected for discussion are neurologic examinations and principles of localization, laboratory aids in neurologic diagnosis and neurosyphilis, epilepsy and related conditions, multiple sclerosis and the encephalitides, the neuritides and tropical and exotic disorders of the nervous system.

General surgery has Dr. Irvin Abell as national consultant. The suggestions for discussion include appendicitis with its complications, hernias, peptic ulcer, intestinal obstruction, neurovascular lesions of the extremities, gas gangrene, skin grafting and the present status of sulfonamide drugs in the treatment of surgical lesions.

The national consultant for diagnostic roentgenology is Dr. Byrl Kirklin. The subjects suggested from which programs could be chosen include the chest, the gastrointestinal tract, the gallbladder, the osseous system and the nervous system.

Plastic and maxillofacial surgery is under the direction of Dr. Robert H. Ivy. The tentative program includes the definition and scope of plastic surgery, maxillofacial surgery, including a general plan of treatment of war injuries of the face and jaws, and fractures of the mandible, maxilla and other facial bones, involving methods of fixation by interdental wiring, splints, skeletal fixation, treatment of complications, such as nonunion by bone grafting, and the repair of contour defects.

Through arrangements by the headquarters of Wartime Graduate Medical Meetings, under the directorship of Dr. Edward L. Bortz, chairman, arrangements were made for Drs. Edwin E. Osgood of the University of Oregon Medical School and Dr. Lowell T. Coggeshall of the University of Michigan School of Public Health to speak for the graduate medical meetings for medical officers of the Canadian Army and Air Force and the United States Army held in the University of Alberta, Edmonton, Alberta, Canada, May 3 to 7. Dr. Osgood spoke on chemotherapy and Dr. Coggeshall on tropical diseases. Arrangements were made also for addresses at the meeting of the Georgia State Medical Association, May 13 and 14. The speakers included Dr. Everett I. Evans of the Medical College of Virginia, who spoke on general surgery, Dr. James H. Means of Harvard Medical School, who spoke on internal medicine, and Dr. Virgil P. Sydenstricker of the University of Georgia School of Medicine, who spoke on nutrition.

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## MATERNITY CARE FOR WIVES OF CERTAIN GRADES OF ENLISTED MEN

Under plans approved by the U. S. Children's Bureau and with funds already voted by Congress, maternity care for wives of men of certain grades in military service and medical and nursing care for their babies can now be provided without cost to the family. Under this plan a pregnant woman may receive antepartum care from a qualified physician either in the clinic or at his office, and at childbirth she and her baby may receive medical and nursing care whether she stays at home or goes to a hospital. Complete maternity care may be provided, including a final physical examination six weeks after the baby is born, and the baby may receive medical care during the first year of its life.

Twenty-three state health agencies are now authorized to provide maternity care for wives of men in the four lowest pay grades of the armed forces, and medical hospital and nursing care for their babies, both without cost to the family, the Children's Bureau of the U. S. Department of Labor announced on May 20.

States whose programs have been submitted and approved were listed by the bureau as Arizona, Arkansas, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Michigan, Mississippi, Nevada, New Jersey, New Mexico, North Carolina, Oklahoma, Rhode Island, South Carolina, Utah, Vermont, West Virginia, Wisconsin and Wyoming.

In states providing these services, the wife and infant of any man serving in the fourth, fifth, sixth or seventh grade of the Army, Navy, Marine Corps or Coast Guard are eligible for care as long as similar services are not available through medical or hospital facilities of the Army or Navy or by or through official state or local health agencies. How much money the family has does not matter.

The forms for requesting such care are made available by the state health departments through local health and welfare agencies, local American Red Cross chapters, antepartum clinics, military posts and local practicing doctors of medicine. The wife fills out and signs her part of the application, including her husband's serial number, and her doctor completes the application and forwards it to the state director of maternal and child welfare or his authorized deputy. In an emergency, medical or hospital care may be given before an application is sent in. The state director of maternal and child health notifies the

patient and attending physician or clinic or the hospital whether or not the care is authorized.

In the states providing these services, the maternity patients can expect complete medical service during the antepartum period, childbirth and six weeks after; health supervision for infants, nursing care in the home through the local health department, including bedside nursing care as necessary for the mother before, during and after childbirth, and for the baby during the first year of life, and hospital care in the wards or at lower rates for maternity patients and infants. The funds cannot be used in part payment for more expensive hospital accommodations; hospital care may be authorized in any hospital, including Army and Navy hospitals where the maternity and pediatric services have been approved by the state health agency.

For further information about the program or in case there is no doctor within reach or if one does not know where to get an application form, write to your director of maternal and child health, state health department.

## COMMITTEE TO STUDY FOOD NEEDS OF INVALIDS

A newly formed committee of physicians and specialists will assist in formulating broad policies for handling the special dietary needs of invalids and persons with specific diseases under the rationing program, the War Food Administration said on May 24. The committee was named by the National Research Council at the request of the Food Distribution Administration and Office of Price Administration. The special committee is studying (1) procedure for obtaining certification by physicians of invalids and persons with specific diseases requiring extra quantities of rationed foods, (2) qualifications of those who may certify as to these needs for extra foods, (3) the procedure of certification which will place a minimum burden on physicians and (4) diseases justifying extra allowances of rationed foods with specific determination of what foods and what quantities are necessary

The committee, which is the Subcommittee on Medical Food Requirements of the Committee on Drugs and Medical Supplies of the National Research Council, also will advise the Office of Price Administration with respect to appeals from decisions of local rationing boards.

Members of the committee are Dr. William D. Stroud, professor of cardiology, Graduate School of Medicine, University of Pennsylvania School of Medicine, chairman; Dr. Clark W. Finnerud, assistant professor of dermatology, University of Illinois College of Medicine; Dr. Gilbert J. Levy, associate professor of pediatrics, University of Tennessee College of Medicine; Dr. Alton Ochsner, professor of surgery, Tulane University School of Medicine; Dr. Cecil Striker, secretary, American Diabetic Society; Dr. C. W. Munger, director, St. Lukes Hospital, New York; Dr. Philip S. Owen, former research assistant, Harvard Medical School, who will serve as technical aide, and Dr. Fred L. Adair, recently professor of obstetrics, University of Chicago Department of Medicine, who will serve as a liaison member representing the Medical Needs Division of the Food Distribution Administration. Dr. W. W. Palmer, professor of medicine, Columbia University College of Physicians and Surgeons, and chairman of the National Research Council's Committee on Drugs and Medical Supplies, is ex officio a member of the Subcommittee on Medical Food Requirements.

## SUPPLEMENTAL GASOLINE RATIONS FOR VICTORY GARDENERS

The Office of Price Administration has amended its mileage rationing regulations to provide up to 300 miles for victory garden travel, if the car owner is regularly cultivating a tract of 1,500 square feet or more devoted to the production of vegetables and if he cannot get to his garden any other way, his labor being necessary for the cultivation of the garden; and provided that he arranges, if possible, to share his car with other gardeners to reduce the amount of additional mileage that will be necessary. When making application for a supplemental rationing of this type, gardeners should refer to Amendment 44 to Ration Order 50, effective April 30.

## EFFECT ON GRADUATE NURSES OF THE "HOLD THE LINE" EXECUTIVE ORDER 9328 OF APRIL 8 AND THE REGULATIONS OF THE WAR MANPOWER COMMISSION OF APRIL 18

The War Manpower Commission, Washington, D. C., on May 18 stated that graduate nurses are subject to the terms of the executive order and the War Manpower Commission regulations in exactly the same way as other workers. Nursing is an essential activity. This means that in all War Manpower Commission areas:

1. Nurses may move as freely as before within the nursing profession, so long as the job transfer does not bring a higher salary or wage rate.
2. A nurse who is now employed in an activity other than an essential activity may accept a job in the nursing field at any salary or wage rate.
3. Nurses can transfer to new positions which bring a higher salary or wage rate only if they secure statements of availability from their present employers or from the United States Employment Service.

There is no prohibition in the order or regulation that would prevent any nurses from becoming members of the armed forces.

This is not a complete interpretation of the implications for nurses but simply highlights some of the main points. For information regarding any specific local situation, one should consult the local United States Employment Service office.

## PUBLIC HEALTH UNDER HITLER

*Das Spital,* Bucharest, No. 62, 1942, contained an article by Dr. Musat and Dr. Rosu on the aspects and possibilities of surgery in field hospitals, stating inter alia that in the first six months of the war the authors, working in a field hospital in the front line, cared for 14,000 wounded, 4,000 of whom were operated on. The majority of the wounds were due to incendiary shell (bomb?) splinters (Brandgranatsplitter). Wounds caused by air bomb splinters and heavy air machine-gun bullets were very serious. Bullet wounds of the stomach were especially dangerous, the mortality rate being 65 to 70 per cent.

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There is a "pressing" shortage of insulin in France, and the strictest controls have been applied to the remaining supplies of this valuable drug, according to an article in the Nazi controlled French newspaper *Action française.* The newspaper article as reported to the Office of War Information declared that there were shortages not only of raw drugs but also in phials and bottles. Lard, lanolin, petrolatum, cocoa butter and other materials used in the manufacture of hair pomade are so scarce that substitutes must take their place, the article said.

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The *Pester Lloyd,* Hungary, of February 18 stated that the Luftwaffe medical service delegation under Hippke, which was to arrive in Budapest on February 21 and stay a week, included Surgical Adviser Chief Surgeon Major E. Gohrbandt, Chief Surgeon-Major Wilhelm Tonnies, adviser on brain surgery to the Luftwaffe; Chief Surgeon-Major Heinz Kalk, adviser on internal diseases and medical adviser to the Fuehrer. Capt. A. Schulz, Propaganda and Pressereferent of the Luftwaffe Sanitary and Medical Service, was also a member of the delegation.

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According to the *Novi List,* Sarajevo, Yugoslavia, of February 7, owing to the fear of infection by spotted fever and abdominal typhus, the inhabitants of Visoko are being vaccinated on the advice of two local physicians who, however, have so much work in this connection that they cannot deal with everybody.

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According to the Rumanian *Timpul* of February 18 the Ministry of Public Health has decreed a number of preventive measures against measles, as more than half of all school children fall victim to it.

# ORGANIZATION SECTION

## OFFICIAL NOTES

### RADIO PROGRAM AT ANNUAL SESSION OF HOUSE OF DELEGATES

Arrangements for radio broadcasts in connection with the annual session of the House of Delegates of the American Medical Association at Chicago have been partially scheduled.

The following programs have been scheduled for broadcasting by the National Broadcasting Company and Columbia Broadcasting System networks, the Blue Network, the Mutual Broadcasting System and local stations in Chicago:

WENR—Blue, Monday, June 7, 3:15 p. m. Central War Time. Comdr. Edward L. Bortz, MC, U.S.N., Philadelphia: "The Navy Doctor."

WGN—Mutual, Tuesday, June 8, 12:45 p. m. Dr. George W. Kosmak, New York: "Maternal and Child Health in Wartime."

WJJD—Tuesday, June 8, 2 p. m. Dr. Henry R. Viets, Boston: "Mental Hygiene in Wartime."

WBBM—CBS., Tuesday, June 8, 4:45 p. m. Dr. James E. Paullin, Atlanta, Ga.: "American Medicine Goes to War."

WLS—Wednesday, June 9, 1 p. m. Rear Admiral Harold W. Smith, MC, U.S.N., Washington, D. C.: "The Treatment of War Casualties."

WMAQ—NBC—Wednesday, June 9, 5:30 p. m. Dr. W. W. Bauer, Chicago: "Session News."

Additional programs are in process of being scheduled, but arrangements were not completed in time for this announcement.

### "SUMMER HEALTH HINTS" ON THE AIR

With the completion of eighteen broadcasts under the title "Before the Doctor Comes," this series will terminate and will be replaced by a new series of broadcasts entitled "Summer Health Hints." Tentatively twelve broadcasts are scheduled for Thursday afternoon at 2:45 p. m. Central War Time over station WLS, Chicago, beginning on June 3 and closing on August 19.

Members of the headquarters staff of the American Medical Association will be interviewed by Mrs. June Merrill of the WLS staff. WLS broadcasts on a clear channel at 890 kilocycles and has an effective service range covering a radius of approximately 500 miles from Chicago. The audience is predominantly rural, and the programs are limited to simple, practical suggestions which can be carried out in daily practice.

### DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 5 p. m. Eastern War Time (4 p. m. Central War Time, 3 p. m. Mountain War Time, 2 p. m. Pacific War Time). An exception is the Chicago area, where the broadcasts are heard by transcription at 10:30 p. m. Saturdays over Station WMAQ.

The titles and guest speakers for the last two programs are:

June 12. "Doctors for Tomorrow."

Speaker, Brig. Gen. Fred W. Rankin, M. C., A. U. S., President of the American Medical Association.

June 19. "Report to America."

On this program will appear two Army medical officers broadcasting by short wave from two foreign theaters of war, one Navy officer broadcasting from a foreign theater and one Navy officer broadcasting from a home base. The names of these officers and their locations are not divulged in advance for military reasons. For the same reason, their subjects will not be announced.

## MEDICAL LEGISLATION

### MEDICAL BILLS IN CONGRESS

*Changes in Status.*—H. R. 149 has been reported to the House providing that for the purpose of the Federal Food, Drug and Cosmetic Act nonfat dry milk solids or defatted milk solids shall be considered to be the product resulting from the removal of fat and water from milk and containing the lactose, milk proteins and milk minerals in the same relative proportions as in the fresh milk from which made. Such solids must contain not over 5 per cent by weight of moisture and a fat content of not over 1.5 per cent by weight unless otherwise indicated. H. R. 2664 has been reported to the Senate, providing for the training of nurses through grants to institutions.

*Bills Introduced.*—H. R. 2726, introduced by Representative Beckworth, Texas, proposes to authorize for each fiscal year a sum sufficient to enable each state to furnish financial assistance to needy incapacitated adult individuals. H. R. 2739, introduced by Representative Jenkins, Ohio, proposes to establish a Food Administration in the Department of Agriculture. H. R. 2820, introduced by Representative Rogers, Massachusetts, provides for the establishment of a permanent medical corps in the Veterans' Administration to constitute a component part of the military forces of the United States. This corps, it is contemplated, will consist of the following members: (*a*) physicians and dentists: 1 surgeon general with the temporary rank of brigadier general, 132 officers with the rank of colonel, 201 with the rank of lieutenant colonel, 500 with the rank of major, 800 with the rank of captain and 1,200 with the rank of first lieutenant; (*b*) nurses and other personnel: 1 superintendent of nurses with the rank of lieutenant colonel, 15 officers with the rank of major, 125 officers with the rank of captain, 400 officers with the rank of first lieutenant, 5,000 officers with the rank of second lieutenant and such other commissioned, noncommissioned, enlisted personnel and civilian employees as may be deemed necessary by the Administrator of Veterans' Affairs. The Medical Corps, it is proposed, will include such female professional and other female technical personnel as the Surgeon General of the corps with the approval of the Administrator deems practical. The rates of pay and allowances, increases of pay, transportation of property, retirement benefits and other gratuities and privileges for commissioned and enlisted personnel of the corps will be identical with those provided for personnel of corresponding rank and status in the United States Army. The establishment of a Medical Reserve Corps is contemplated by this bill.

## STATE MEDICAL LEGISLATION

### Alabama

*Bill Passed.*—S. 35 passed the senate May 19. It proposes the creation and establishment of a four year school of medicine in the state to be under the sole management, ownership and control of the Board of Trustees of the University of Alabama and to be known as "The Medical College of Alabama."

### California

*Bills Enacted.*—A. 327 has become chapter 407 of the Laws of 1943. It amends the health and safety code relating to the licensing of clinics, dispensaries and maternity hospitals by exempting therefrom a hospital corporation organized and operated exclusively for charitable purposes and any teaching or educational institution exempt from income taxation under the federal revenue acts. A. 1175 has become chapter 530 of the Laws of 1943. It amends the business and professions code by requiring an applicant for a license to practice medicine to prove that a diploma from an approved school has been issued him and, if the application is for a reciprocity certificate, that the granting of a diploma was a condition precedent to his admission to the examination for the license on which his application for reciprocity is based. A. 1659 has become chapter 732 of the Laws of 1943. It amends the business and professions code by requiring vendors of prophylactics to renew their licenses annually.

### Connecticut

*Bills Passed.*—Substitute for S. 484 passed the house and the senate May 19. It proposes to amend the law relating to the labeling and sale of drugs by, among other things, excepting from such regulations the sale of salves, ointments, lotions and powders and other preparations designed and intended solely for external use and containing sulfanilamide or any compound or derivative thereof. Substitute for H. 312 passed the house May 14 and the senate May 19. It proposes that the commissioner of health shall, on request, furnish medical, hospital, nursing, obstetric and pediatric care to wives, and to infants under the age of 1 year, of men serving in the armed forces of the United States, when such wives are unable to secure proper care for themselves or for such infants. Substitute for H. 1026 passed the house May 14 and the senate May 18. It proposes to authorize a court, in certain cases, to order an examination of the accused to determine whether or not he is suffering from a venereal disease and, if so, to make such order with reference to the continuance of the case or the detention, treatment or other disposition of the person as the public health and welfare requires, such examination to be conducted at the expense of the state. Substitute for H. 1312 passed the house April 28 and the senate May 11. It amends the law relating to the practice of chiropractic by eliminating therefrom the existing requirement that chiropractors show satisfactory evidence, at the time of the annual renewal of their licenses, that they have attended at least one of the two day educational programs conducted by the Connecticut Chiropractic Association, Inc., the subjects of such programs being under the supervision of the state board of chiropractic examiners.

*Bills Enacted.*—S. 259 has become chapter 243 of the Laws of 1943. It amends the law relating to the practice of natureopathy by authorizing the granting of certificates without examination to persons who have been in active and continuous practice of natureopathy in any other state in which he was licensed to practice natureopathy for three years immediately preceding the date of his application if he meets the educational and other requirements provided for in the existing law, except that an applicant for such certificate after his discharge from the armed forces of the United States must show that he had engaged in the practice of natureopathy for three years immediately preceding the date of his induction into such armed forces. S. 262 has become chapter 216 of the Laws of 1943. It authorizes persons formerly licensed to practice physiotherapy but now retired from active practice or living outside the state to resume practice in the state by merely notifying the state department of health and paying the required registration fee. S. 264 has become chapter 213 of the Laws of 1943. It requires physiotherapists to renew their licenses annually. H. 716 has become chapter 234 of the Laws of 1943. It amends the law relating to physiotherapy technicians by repealing the existing section setting forth qualifications for registration of physiotherapists without examination.

### Florida

*Bills Introduced.*—S. 301 proposes an appropriation of $20,000 to provide for the vocational rehabilitation of disabled persons who are physically incapable of earning a livelihood but whose disabilities appear to be amenable to treatment or surgery and could be removed or materially diminished to the extent that such persons would then be physically able to engage in remunerative employment. S. 540 proposes that it shall be unlawful for any person to act as operator, driver or attendant in any ambulance at the time said ambulance is rendering service to the public without first having procured a current first aid certificate showing that the said person has passed both a standard and an advanced course in first aid. Substitute for H. 146 prohibits a physician or surgeon from disclosing information acquired by him in attending any of his patients, except under certain designated circumstances, one of such circumstances being whenever it shall be ascertained and determined by an order, made and entered in the cause pending, by the judge or one of the judges of such court, after such notice to the patient as may be directed by the said judge that such testimony is necessary for the determination of the issues made in the cause and cannot be obtained in any other manner and that, in the absence of such testimony, the ends of justice may be defeated. The proposal further provides that its terms should extend to all duly licensed physicians and surgeons no matter what school of medicine they may follow or under what statute or law they are permitted to practice in the state.

*Bills Passed.*—S. 239 passed the senate April 26. It proposes to require every physician attending a pregnant woman to take, or cause to be taken, a sample of blood of such woman at the time of the first professional visit or within ten days thereafter, such blood to be sent to a recognized laboratory for a serologic test for syphilis. H. 480 passed the house May 10. It requires every person making application for a license to marry to furnish a certificate from a duly licensed physician stating that the applicant has been given such physical examination, including a standard serologic test, as may be necessary for the discovery of syphilis and that the applicant is not infected with syphilis in a communicable stage. The proposal would exempt from the above requirement an applicant who is in the military service of the United States and would limit the fee of the physician making the examination and issuing the certificate to $1.

*Bills Enacted.*—S. 41 was approved May 12. It amends the natureopathic act by, among other things, (1) increasing the course of study in an approved natureopathic school from three to four years, eliminating the prior requirement that no two of such courses may be given in the same year, (2) requiring natureopaths, at the time of the annual renewal of their license, to present satisfactory evidence that they have attended the two day educational program conducted by the Florida Naturopathic Physicians Association, Inc., or its equivalent, (3) providing for the termination of a license to practice natureopathy in the event that the holder thereof fails to renew said license annually and (4) requiring the registration of natureopathic licenses with the state board of health. S. 366 was approved May 19. It requires the payment of an annual license tax of $10 by any person, firm or corporation engaged in the manufacture, processing and dispensing of lenses for the correction, relief or protection of the human eyes and their appendages, the manufacture, processing, fitting and dispensing of frames therefor, without, however, engaging in the diagnosis of the human eyes and the determination of the refractive powers of the human eyes or prescribing of lenses or treatment for human eyes.

### Illinois

*Bills Introduced.*—S. 402, to amend the dental practice act, would authorize licensed dentists to employ or engage the services of other persons or corporations to construct or repair, extraorally, prosthetic dentures, bridges or other replacements for a part of a tooth but makes it unlawful for such person

so employed or engaged to advertise other than in trade journals or publications and then only in the prescribed manner. H. 704 proposes to include within the duties of the department of public welfare the inspection, investigation and licensing of nursing homes for the care of persons suffering from physical diseases, the term "nursing homes" not to include hospitals. H. 729, to amend the hospital lien law, proposes to extend the privileges thereof to hospitals maintained and operated entirely by a county.

### Massachusetts

*Bills Introduced.*—S. 491 proposes to authorize the board of registration in nursing to examine and register as a registered nurse any applicant who is 20 years of age and examine and license as an attendant any applicant who is 19 years of age during the existing state of war. Such applicants, however, would be required to comply with the other pertinent provisions concerning the registration of nurses. H. 1655 proposes to authorize expenses for medical, hospital and other services rendered to aged persons which remain unpaid at the time of such person's commitment to an institution or of death to be paid directly to the person furnishing such service. H. 1716 proposes to amend the premarital examination law by authorizing physicians registered or licensed to practice in any other state of the United States to execute the required certificate.

### Missouri

*Bill Introduced.*—S. 165 proposes the enactment of an enabling law relating to and providing for the licensing, regulation, examination, supervision and dissolution of corporations engaged in the furnishing of medical expense indemnity or service or hospital expense indemnity. Among other things, the proposal would provide that medical expense indemnity or service shall consist of reimbursement or indemnity for medical or surgical care or service, or the furnishing of same by or through duly licensed physicians, for nursing service and of furnishing necessary appliances, drugs, medicines and supplies; hospital expense indemnity or service shall consist of reimbursement or indemnity for hospital care or the furnishing of same through a hospital or group of hospitals organized, maintained or operated by governmental or private interests as regularly recognized or authorized by the laws of the state.

### Ohio

*Bill Enacted.*—H. 145 was approved May 20. It provides that the holder of an expired license or certificate from the state of Ohio to practice any profession, which has not been renewed because of the service of the holder thereof in the armed forces of the United States, shall, on presentation of satisfactory evidence of honorable discharge within six months of such discharge, be renewed by the issuing board without penalty and without reexamination.

### Texas

*Bills Enacted.*—S. 67 was approved May 6. It amends the law relating to the sale of narcotic drugs by providing, among other things, that any person may purchase at any time 1 ounce of paregoric without a doctor's prescription. H. 343 was approved May 6. It amends the law relating to the operation of nonprofit hospital service corporations by a new section relating to the expenses of such corporations and the investment of the funds of such corporations. H. 651 was approved May 17. It authorizes a county to erect, equip and operate a hospital for the care and treatment of the sick, infirm or injured and to levy and collect a tax for such purposes.

### Wisconsin

*Bills Introduced.*—S. 380 proposes to provide treatment for any physical or mental disease or injury which is directly or indirectly traceable to military or naval service to any man or woman who performed active duty in the military or naval service of the United States and received an honorable discharge therefrom. A. 665 proposes to authorize a licensed nurse in another state to be granted a certificate in Wisconsin without examination if her credentials of general and professional educational qualifications are equivalent to those required in Wisconsin.

# MEDICAL ECONOMIC ABSTRACTS

## DEATHS OF SCHOOL CHILDREN

The death rate during the school age (5-14) is less than at any other age period and has declined almost 75 per cent during the present century, according to a special report of the Bureau of the Census, April 13, 1943. In 1900 the rate was 3.9 and in 1940 1.0 per thousand in the registration area, which was expanding during that period to include several states with a higher than average mortality.

The decline would have been far larger had it not been for the great increase in accidental deaths and especially those from motor vehicles, which were almost nonexistent in 1900 but which had become the most important cause of accidental mortality in 1940. There is, however, some reasons for encouragement in the fact that since the national program for safety education in the schools was inaugurated in 1922 there has been a decline of 15 per cent in motor accidents to school children.

The leading causes of death in 1940 were:

| | |
|---|---|
| Accidents | 28.8 per cent |
| Influenza and pneumonia | 9.0 per cent |
| Disease of the heart | 8.0 per cent |
| Appendicitis | 8.0 per cent |
| Tuberculosis | 5.5 per cent |

The greatest reduction was in the diphtheria death rate, which ranked first in 1900 with a rate of 69.7 per hundred thousand but by 1940 had dropped in rank order to the twelfth place with a rate of 1.7 per hundred thousand. "This decrease of 97.5 per cent in the diphtheria rate," says the report, "may well be considered one of the greatest triumphs in the control of communicable diseases by the concerted application of preventive and therapeutic measures."

Rheumatic fever throws a growing shadow on the picture. It seems to be increasing in frequency and, while it "has a low fatality rate at the first attack," it often "produces permanent handicaps and has a high fatality rate for its recurring attacks." However, life expectation for the "school age child was about five or six years longer in the fourth decade of this century (1930-1939) than in the first decade."

## HANDICAPPED WORKERS

An analysis of the active file of the United States Employment Service in Ohio on January 16 showed that 1 out of 12 of 89,177 applicants registered for employment was physically handicapped. Eighty-six per cent of these were men and one fifth were skilled workers. Fifteen per cent had limb impairments, with an additional 11 per cent who had lost some portion of their limbs through amputation. Over one half were 55 years of age or older and two thirds had no education beyond the grammar schools.

Employment service managers estimated that only 3 per cent of those handicapped "had excellent prospects of being placed locally within the next sixty days. Prospects were considered good for about one fifth and fair for somewhat more than one half." More than one fifth were considered virtually unemployable. As to rehabilitation, the report concludes that "Undoubtedly the employment prospects of many of these applicants would be enhanced by rehabilitation. The large number of hernias reported, for example, indicates that medical treatment would probably aid in improving their usefulness. For others, special training may be required. In this respect the handicapped have the same further disadvantage as many inexperienced workers currently entering the labor market. They may require different types of training, but the fact that they may lack experience on the job should not prove as formidable as in the past."

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

## ILLINOIS

**"Cosmic Ray" Sold in Health Devices.**—Three Chicagoans and a Danville couple were named on May 21 in indictments charging conspiracy and operation of a confidence game by allegedly selling "cosmic ray" tubes for $300, the Chicago *Tribune* reported, May 22. Those indicted by a Vermilion County grand jury were George Erickson and I. B. Haviland, who gave their address as 30 North La Salle Street, Chicago; Robert E. Nelson, Chicago, and Mr. and Mrs. George Brown, operators of a Danville health institute. John Allen, assistant state's attorney, said the defendants sold pencil-like tubes to the sick, claiming they were a "radioactive" development in healing. Allen said the tubes were analyzed and found to contain nothing that would produce radioactivity.

### Chicago

**Course on the Rorschach Test.**—Michael Reese Hospital offers a course on the Rorschach test, June 7-11, under the direction of Samuel J. Beck, Ph.D. Emphasis will be placed on those less serious mental disturbances in which success in treatment is indicated. The course will be in session in two two hour periods daily for five days. Communications should be addressed to the department of neuropsychiatry, Michael Reese Hospital.

**Dr. Ole Nelson Named Medical Director of Cook County Hospital.**—Dr. Ole C. Nelson, assistant warden at Cook County Hospital and a member of the staff for more than twenty years, has been appointed medical director of the hospital. He succeeds Dr. Charles Marshall Davison, who resigned because of "pressing personal duties." Dr. Davison, who will continue as chief of the surgical staff, had held the position since December 1939. It was reported that Dr. Nelson would probably consolidate the new position of medical director with his present position of assistant warden.

**Five Pathologists Named to Coroner's Consulting Staff.**—The appointment of five pathologists to serve as "dollar-a-year" members of the coroner's consulting staff was announced in the Chicago *Sun*, May 25. The new appointees are Drs. Otto Saphir, professor of pathology at the University of Illinois College of Medicine; James P. Simonds, head of the department of pathology at Northwestern University Medical School; Edwin F. Hirsch, associate professor of pathology at the University of Chicago School of Medicine; Paul R. Cannon, chairman of the department and professor of pathology at Chicago, and John F. Sheehan, chairman of the department of pathology at Loyola University School of Medicine. These physicians will serve with the group of four doctors headed by Dr. Karl A. Meyer who act as consultants with the nine full time physicians in the coroner's office in special cases.

**The Koessler Fellowship.**—The Jessie Horton Koessler Fellowship of the Institute of Medicine of Chicago for the aid of research in biochemistry, physiology, bacteriology or pathology will be available on September 1. The stipend is $500 a year with the possibility of renewal for one or two years. Only such applications will be considered as are approved by the head of a department in the fields mentioned or by the director of a research institute or laboratory in Chicago and which stipulate that the recipient of the fellowship shall be given adequate facilities for carrying out the proposed research, concerning which full information is required in the application. Applications will be received up to July 1 and should be sent to Dr. Paul R. Cannon, 950 East 59th Street. Dr. Cannon, on the recent death of Dr. H. Gideon Wells, was appointed chairman of the Committee on the Jessie Horton Koessler Fund.

## KANSAS

**Members of State Board of Health.**—Gov. Andrew P. Schoeppel, Topeka, recently appointed Dr. Clyde D. Blake, Hays, past president of the Kansas Medical Society, as a member of the state board of health and reappointed the following members for additional terms: Drs. Forrest L. Loveland, Topeka; Harry L. Aldrich, Caney; Gilbert A. Leslie, McDonald, and George I. Thacher, Waterville.

**Institute on Industrial Health.**—A wartime institute on industrial health was held in Kansas City on June 3 and in Wichita on June 4 under the auspices of the state medical society and the state board of health. Among the speakers was A. G. Hewitt, general manager of the Visking Corporation, Chicago; Dr. Floyd C. Beelman, Topeka, and Dr. Carl M. Peterson, Chicago, secretary of the Council on Industrial Health, American Medical Association.

## MASSACHUSETTS

**Honorary Degrees.**—At the recent commencement of Tufts College Medical School, held jointly with the Tufts College Dental School, Boston, the honorary degree of doctor of laws was conferred on Dr. Lewis H. Weed, professor of anatomy at Johns Hopkins University School of Medicine, Baltimore, and chairman of the division of medical sciences, National Research Council, who delivered the convocation address on "War Research in Medicine and Dentistry." Comdr. Albert Warren Stearns, M. C., U. S. Naval Reserve, dean of the medical school, who is now in active service, and Dr. Frank R. Ober, Boston, received the honorary degrees of doctor of science.

**Journal Dedicated to Dr. Lancaster.**—The *American Journal of Ophthalmology* for May was designated the Lancaster Testimonial Issue to mark the eightieth birthday of Dr. Walter B. Lancaster, Boston. Dr. Lancaster is now in private practice after concluding two years as chief of staff of the Dartmouth Eye Institute and ophthalmic surgeon of the Mary Hitchcock Memorial Hospital at Hanover, N. H. In 1889 Dr. Lancaster graduated at Harvard Medical School, Boston, where he later served as a member of the faculty. He was chairman of the Section on Ophthalmology of the American Medical Association in 1928. He has been president three times of the New England Ophthalmological Society and in 1924 had the same office with the American Academy of Ophthalmology and Otolaryngology and in 1935 of the American Ophthalmological Society.

## MICHIGAN

**Institute on Public Health Economics.**—On May 10 a two week institute on public health economics started at the new School of Public Health of the University of Michigan, Ann Arbor, and constituted a preview of the activities of the school of public health. The institute was devoted largely to a discussion of prepayment plans for hospital care and was provided for by a grant from the Rockefeller Foundation through the Committee on Research in Medical Economics, New York, and the faculty and guest speakers of the School of Public Health. Nathan Sinai, D.P.H., secretary of the faculty of the school, was in charge of the institute and the guest lecturers included Dr. Joseph W. Mountin, Washington, D. C.; George St. J. Perrott, Washington; Michael M. Davis, Ph.D., New York; Clarence R. Kulp, Ph.D., Philadelphia; Dr. Albert E. Larsen, San Francisco; John R. Mannix, Detroit; Dr. Frederick D. Mott, Washington, D. C.; Clarence Rufus Rorem, Ph.D., and Maurice J. Norby, Chicago; Louis H. Pink, LL.D., New York, and Dr. Henry E. Sigerist, Baltimore. The institute was attended by fifty-six students who came from all parts of the United States, representing medical, public health, insurance and governmental agencies. The work of the institute was divided into general sessions for all students and special courses in the field of management of prepayment plans, appraisal of community facilities and needs, statistics and accounting and personnel management. The new $750,000 public health building is not ready for occupancy but is expected to be completed by July 1 (THE JOURNAL, June 27, 1942, p. 738). The building and its equipment cost $750,000, $400,000 being provided by the W. K. Kellogg Foundation, $300,000 by the Rockefeller Foundation and $50,000 by the National Foundation for Infantile Paralysis. The site was offered by the university. The recent institute is part of the school's program for continued education in the field of public health practice and related services. According to Henry F. Vaughan, Dr.P.H., dean of the school of public health, it is the intent of the school to broaden the program of instruction in public health economics. The curriculum is already being offered at graduate level, embracing work to the degree of master of public health.

## NEW MEXICO

**Indian Registration.**—To secure more complete registration of births and deaths in the Indian reservations, hospitals and pueblos, the New Mexico Division of Vital Statistics initiated a program that will bring the importance of registra-

tion into the homes of as many Indian families as possible. The work is being carried on by Miss E. Anne Amison, New Mexico field agent of registration and the visiting nurse of the Indian Service. Talks are given in the schools of each pueblo visited. In each case leaflets explaining the importance of registration are given to the children to take home. The Indians give evidence of great interest and satisfaction, knowing that they are to be recorded with the state as well as with the Indian Service. According to the *Registrar,* this is a significant step in the promotion of registration, as heretofore the Indian certificates were routed to the offices of the Indian Service, and only a few were ever recorded in the state division of vital statistics.

## NEW YORK

**Prizes Awarded.**—The annual award of $100 offered by the Taylor Instrument Companies for the best thesis on a medical subject was presented to Drs. Andrew Kerr Jr., Rochester General Hospital, and Robert L. Sewell, resident in surgery at Strong Memorial Hospital, Rochester. The title of Dr. Kerr's thesis is "Weight Gain in Pregnancy—Its Relation to Size of Infant and Length of Labor." Dr. Sewell's subject dealt with experimental use of the sulfonamide compounds and x-ray therapy in gas gangrene. The two papers, although of different types, were of such equal merit that the judges felt that each deserved the full award, but it was decided to divide the award equally.

### New York City

**Rehabilitation Service Center.**—The establishment of a rehabilitation center at Teachers College, Columbia University, under the direction of Herbert B. Bruner, Ph.D., has been announced. The program will start with the summer session and aims to refit the handicapped for active participation in industry. The center was established after nearly two years of intensive study and research into the problems of the disabled. The new program seeks to make available trained workers in the field of rehabilitation. It was pointed out that at present there were approximately only 500 workers in the United States properly qualified to do rehabilitation case work.

**Leon Lascoff Dies.**—J. Leon Lascoff, Sc.D., pharmacist, holder of the Remington Honor Medal and a former president of the American Pharmaceutical Association, died May 4, aged 75. According to the New York *Times,* Dr. Lascoff never sold anything but drugs in his store. For more than thirty years he was a member of the New York State Board of Pharmacy, serving as president in 1916, 1920 and 1930. He was a trustee of the Columbia University College of Pharmacy and a founder and past president of the New York County Pharmaceutical Society. He was a founder and treasurer of the New York Veteran Druggists Association and for years had been prescription editor of *Drug Topics.*

## OHIO

**Radio Program "Your Health" Reopens.**—On June 19 Station WLW will reopen a second edition of the program "Your Health," which has been conducted for years by Dr. Carl A. Wilzbach, health commissioner of Cincinnati, in cooperation with the Academy of Medicine of Cincinnati, the Public Health Federation and the Cincinnati Board of Health. The new series will be a revised presentation of the earlier presentations and will utilize Dr. Wilzbach as a narrator interspersed with dramatic sequences.

**Personal.**—Dr. John W. Wilce, Columbus, has been named to represent the Ohio State Medical Association on the state advisory committee on recreation and physical education, which is supervising the Ohio Physical Fitness Program for the state department of education. Mr. Richard A. Aszling, director of the bureau of public education of the state medical association since June 1939, has resigned to become director of public relations for the midwest region of the Borden Company with headquarters in Columbus. —— Dr. Chester W. Waggoner, Toledo, has been reappointed a member of the state medical board for a term ending March 18, 1950. Dr. Waggoner has just completed seven years on the board.

## PENNSYLVANIA

**Society News.**—Dr. Myron F. Metzenbaum, Cleveland, addressed the Western Pennsylvania Eye, Ear, Nose and Throat Society in Johnstown, May 20, on "Replacement of the Dislocated Lower End of the Cartilaginous Nasal Septum to Reestablish Normal Nasal Function and to Aid in the Normal Development of the Sinuses, Jaws and Teeth."

### Philadelphia

**Strittmatter Award and the Da Costa Oration.**—The twentieth annual Strittmatter Award of the Philadelphia County Medical Society was presented to Dr. Hubley R. Owen, director of public health of Philadelphia and chairman of the local defense council, at special ceremonies in the society's building May 19. Dr. Owen received the award, consisting of a scroll and gold medal, for his achievements in both positions and in recognition of his former work as chief surgeon, medical division, of the city department of public safety, which extended over a period of twenty-five years. On the same occasion Dr. Eldridge L. Eliason, John Rhea Barton professor of surgery at the University of Pennsylvania School of Medicine, delivered the fourteenth annual J. Chalmers Da Costa Oration on "Saga of Fracture Therapy."

**New Fluoroscopes Installed at Pennsylvania Hospital.**—Two new x-ray machines have been installed in the University of Pennsylvania Hospital through funds given by William H. Donner, founder of the International Cancer Foundation, in memory of his son, William H. Donner Jr. One, called a biplane fluoroscope because it enables examinations to be made in two planes, horizontal and vertical, will be used to locate such foreign bodies in the lungs as coins and safety pins. A turntable on the machine makes it possible to position a patient so that x-ray pictures can be made from any angle, even vertical, without lifting or turning him bodily. The fluoroscopic assembly suspended from the ceiling and the examination table, riding on miniature trolley tracks across the revolving turntable, constitute the only visible portions of the apparatus. All other parts are concealed behind a wall panel and under the floor. The second installation is a multiplane fluoroscope which will be used during the setting of broken bones. Designed to assure the perfect realinement of fractures, the multiplane fluoroscope is suspended from the ceiling of an overhead trolley and counterbalanced for ease of movement. The mechanism can be swung into any position desired, but the x-ray beam remains pointed toward the fluoroscopic screen, hooded to shut out light, on which the fracture image appears. The Pennsylvania hospital has also installed a dark room for processing x-ray films on a mass production basis. The installations were effected by Westinghouse Electric & Manufacturing Company.

## RHODE ISLAND

**State Society Creates Executive Office.**—Mr. John E. Farrell, executive secretary of the Providence Medical Association, Providence, has been chosen to fill the new office of executive secretary of the Rhode Island Medical Society. Mr. Farrell will continue as executive secretary of the Providence group.

**Industrial Health Institute.**—A Rhode Island Industrial Health Institute was held at the Narragansett Hotel, Providence, May 19, under the auspices of the Pawtucket Business Chamber, Providence Chamber of Commerce, Providence Council of Social Agencies, Rhode Island Medical Society, Rhode Island State Council of Defense and the Rhode Island Department of Health. Among the speakers were:

Mrs. Doris R. McGowan, field representative, division of women and children, state department of labor, The Problem of Women in Industry.
Dr. Charles P. Fitzpatrick, Howard, Emotional Manifestations of Fatigue in Industry.
Dr. James P. Deery, Providence, Health Services Available to Industry in Rhode Island.
Hugo F. Zambarano, safety engineer, Travelers Insurance Company, Hartford, Conn., Safety in Industry.
Thomas H. Bride Jr., state director, U. S. Employment Service, Problems of Employing the Physically Handicapped and the Aged.
Comdr. Marion B. Sulzberger (MC), U. S. Naval Reserve, Experiments on the Effects of Fiberglas on Animal and Human Skin.
Dr. Leroy U. Gardner and Thomas M. Durkan, chief chemist, Trudeau Foundation, both of Saranac, N. Y., Fiberglas Inhalation Tests.
Dr. John G. Downing, Boston, Industrial Skin Diseases.
Dr. Ubaldo E. Zambarano, Wallum Lake, Tuberculosis in Industry.
Dr. Hilary J. Connor, Providence, Venereal Disease Control in Industry.

Oswald F. Hedley, surgeon, U. S. Public Health Service, addressed the luncheon session on "What the Average Plant Can Do to Have an Industrial Health Program."

## WEST VIRGINIA

**State Medical Election.**—Dr. Robert J. Reed Jr., Wheeling, was chosen president-elect of the West Virginia State Medical Association at its annual meeting in Charleston, May 17-18, and Dr. Robert J. Wilkinson, Huntington, was inducted into the presidency. Other officers are Drs. Harry G. Steele, Bluefield, and Thomas G. Reed, Charleston, vice presidents, and Thomas M. Barber, Charleston, treasurer. Dr. Reed Jr. is the son of Dr. Robert J. Reed, Wheeling, who served as president of the association in 1919. A resolution was adopted at the meeting recommending that any physician who is a legal

resident of the state when he has finished his medical training, whether it be internship or residency, who is called into the service of the armed forces of the United States and who is licensed to practice by the Public Health Council of West Virginia or the National Board, shall be eligible for membership in the society of the county of which he is a resident without the probationary period of practice and shall be exempted from payment of dues as long as he remains in active military service.

## GENERAL

**Meeting of Radiologists.**—The annual meeting of the American College of Radiology will be held at the Palmer House, Chicago, June 6, under the presidency of Dr. Byrl R. Kirklin, Rochester, Minn. The Conference of Teachers of Clinical Radiologists sponsored by the college, which will be held in conjunction with the meeting, offers the following program:

Capt. Charles F. Behrens (MC), U.S.N., Wartime Radiology in the Navy.
Col. Henry G. Moehring, M. C., U. S. Army, University of Tennessee, Army School of Radiology, Wartime Radiology in the Army.
Comdr. Edward L. Bortz (MC), U.S.N.R., Philadelphia, Wartime Graduate Medical Meetings.
Mr. R. H. Myers, Washington, D. C., War Production Board, Production and Allocation of X-Ray Equipment and Supplies.

**Knudsen Medal Goes to Dr. Sawyer.**—The 1943 W. S. Knudsen Award of the American Association of Industrial Physicians and Surgeons was presented to Dr. William A. Sawyer, since 1919 medical director of Eastman Kodak Company, Rochester, N. Y., for "outstanding work in control of tuberculosis; constructive contributions to a practical program of nutrition in industry, and setting up a program of rehabilitation for handicapped workers in industry." The award, established in 1938 by William S. Knudsen, then president of General Motors Corporation, for "the most outstanding contribution of the year to industrial medicine," was given to Dr. Sawyer at a dinner of the association in Rochester, May 26. Dr. Sawyer, who was born in Iowa, graduated at the University of Pennsylvania School of Medicine, Philadelphia, in 1913.

**International College of Surgeons.**—The fourth international assembly of the International College of Surgeons will be held at the Waldorf-Astoria Hotel in New York, June 14-16, in conjunction with the eighth national assembly. War surgery and rehabilitation will be the theme of the program, which will include, among other speakers, the following:

Col. Raymond W. Bliss, M. C., U. S. Army, The Transportation and Care of the Sick and Wounded from the War Zones.
Mr. Rodney Maingot, F.R.C.S., London, Management of Wounds of the Abdomen.
Mr. Hamilton Bailey, F.R.C.S., London, Crush Syndrome.
Dr. V. V. Lebedenko, The Organization of Surgical Aid in the Soviet Army.
Dr. Fred H. Albee, New York, Reconstruction of Bones and Joints.
Robert T. Merrill, attorney, Havre, Mont., A Layman's View of Rehabilitation.
Dr. Martial Bourand, Port-au-Prince, Haiti, Autopyotherapy in General and War Surgery.

Dr. Herman de Las Casas, dean of the Faculty of Medicine of the University of Caracas, Venezuela, will deliver the annual Manuel Corachan Memorial Oration in Surgery.

**Cancer Fellowships Awarded.**—At a meeting of the board of directors of the Finney-Howell Research Foundation, Inc., Baltimore, the following annual fellowships were awarded: Dr. Rose I. Shukoff, University of Petrograd, to work at the Glasgow Royal Cancer Hospital, Glasgow, Scotland, under Dr. P. R. Peacock, for the third year; Emilia Vicari, A.M., Ohio State University, Columbus, to work at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine, under Clarence C. Little, Sc.D., for the third year; Borroughs Reid Hill, Ph.D., Tulane University, New Orleans, to work with Louis F. Fieser, Ph.D., at Harvard University, Cambridge, Mass., for the second year; Dr. Nelicia Maier, Paris, France, to work at Yale University School of Medicine, New Haven, Conn., with Dr. William T. Salter, a new fellowship, and James Alexander Miller, M.S., University of Wisconsin, to work at the medical school, University of Wisconsin, also a new award. Fellowships carrying an annual stipend of $2,000 are awarded for a period of one year and applications must be made on blanks furnished by Dr. William A. Fisher, secretary of the foundation, 1211 Cathedral Street, Baltimore, before January 1 of each year. Fellowships are awarded only for research into the cause or causes and the treatment of cancer.

**Koch Trial Ends in Jury Disagreement.**—In March 1942 the Federal Grand Jury sitting at Detroit indicted the Koch Laboratories, Inc., together with two of the officers, Dr. William Frederick Koch and his brother Louis Koch, finding them responsible for the shipment in interstate commerce of packages of allegedly misbranded drugs variously labeled as Glyoxylide, Malonide and Benzoquinone. The indictment contained twelve counts covering twelve shipments of the products. Under the penalties of the Federal Food, Drug and Cosmetic Act this offense would bear on conviction a total maximum penalty not to exceed twelve years' imprisonment together with a $12,000 fine. The trial began on January 12 and the prosecution produced 49 witnesses who testified as experts and/or fact witnesses. The government rested its direct case on February 4 after presenting testimony that the products distributed by the defendants were misbranded in that they are not efficacious in the cure, mitigation, treatment or prevention of cancer, allergies, infections and their sequelae as claimed on the labels. Between February 5 and April 20 the defendants presented 104 witnesses including Dr. William F. Koch together with 24 licensed practitioners of medicine, osteopathy, dentistry and veterinary medicine. Ten of these witnesses did not appear in court but gave depositions from various parts of the United States, from Brazil and from England. The doctors who took the witness stand in behalf of the defendants testified to having cured, or at least having more or less successfully treated, several hundred patients with the "Koch Synthetic Antitoxins"; the depositions recounted treatment of an additional 200 cases; 34 selected laymen testified before the jury that they had been cured by Dr. Koch or by doctors using his drugs. The remedies were represented as being efficacious in the treatment of sixty-nine distinct diseases ranging from acute appendicitis to herpes zoster, and special emphasis was placed on cancer, tuberculosis, coronary thrombosis and allergies. This was the longest trial in the history of the Food and Drugs Act, the court transcript running well over 9,000 pages exclusive of the depositions, which aggregated several thousand pages themselves. On May 19 (nineteenth week) the judge gave his charges to the jury, which failed to reach an agreement after over eight days of deliberation and was dismissed on May 28. Following dismissal, the jury was polled and it was learned that nine had voted for conviction and three for acquittal. It was reported that the three who had held out for acquittal had done so from the first ballot. No date has been set for the retrial of the case, but it is assumed that it may be reached sometime late in the fall.

## LATIN AMERICA

**Dr. Baehr in Mexico.**—Dr. George Baehr, chief medical officer, Office of Civilian Defense, Washington, D. C., is in Mexico City to confer with Mexican civilian defense officials on their organizational problems. On June 3 Dr. Baehr spoke in the National Theater on "The Organization and Operation of the Emergency Medical Service" and showed a slide film entitled "Operation of Emergency Medical Service." The sound track of the film is in Spanish. The following day Dr. Baehr discussed "Rescue Service" and showed the motion picture on "Work of the Rescue Service."

**First National Congress of Public Welfare.**—The department of Public Welfare of Mexico, through its secretary, Dr. Gustavo Baz, announces the first National Congress of Public Welfare, to be held in Mexico City August 15-22. A presidential order calling the congress was issued in view of the growing importance of the problems of social welfare throughout the world, intensified and multiplied by the present war; the pressing need of unifying the criteria, the administration and the public welfare methods throughout the country; the urgency of stimulating private cooperation toward the solution of the great national welfare problems, and the advantages that result from the interchange of ideas between institutions and specialists interested in public welfare.

**Public Health Program in El Salvador.**—The republic of El Salvador has recently made additional appropriations to project a public health program which was launched last year supplementing by several methods initial funds amounting to half a million dollars received from the United States. San Salvador has authorized expenditures of $80,000 for improvements to the water and sanitation systems and the construction of a new market, a slaughterhouse and a public laundry. San Miguel is building a $50,000 sewerage system and Santa Tecla has authorized expenditures of $37,500 for a similar system. Other cities which have made appropriations for health and sanitation improvements in line with the program are Atiquizaya, Zacataculuca and Tonacatepeque. Similar action is being considered by Chalchuapa and Ahuachapan. The sums set aside by these towns for health work will be supplemented by funds from the Servicio Cooperative Inter-Americano Salud Publica. This agency is carrying on the inter-American health and sanitation work in Salvador under the direction of the Sanidad Publica.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

April 24, 1943.

### The Projected National Medical Service

Speaking at the opening of a maternity and child welfare center, Mr. Ernest Brown, minister of health, said that under the Beveridge scheme every one would be able to call to his aid the best medical services that modern science could provide. The government looked confidently to the local health authorities, with their long experience and resilience in meeting the problems both of war and of peace, to undertake the new responsibility. The new task might involve adjustments of local government, as the units must be large enough to allow scope for efficient planning. Another great principle was personal and professional freedom. Some were afraid of an organized national health service because they thought it would be a bureaucratic machine by which patients would be dragooned into health and doctors dragooned into mediocrity and servility. He would be the first to condemn such a service and would shrink from the task of preparing for it. But he did not believe this. Health was an intensely personal matter, and any national service must be an intensely personal service. The family doctor, chosen by the family as the one in whom they had confidence and whom they often held in affection, must be the foundation stone.

Among doctors there was a real and intelligible fear that an organized national health service would bring strict control of the day to day professional work, the rule of forms and routine, the end of initiative and professional independence. He fully appreciated the danger; but it was one which could be avoided, and was not a defect inherent in every kind of national service. The medical service could be so organized as to confer on the average practitioner a freedom to exercise his professional talents in a measure enjoyed at present only by a fortunate minority. One other guiding principle must be the promotion of health. It was not enough to organize the treatment of sickness when it had arisen. The causes of ill health must be tracked down and removed, and individual fitness must be promoted and maintained. The national service must be designed to prevent rather than cure. The field the government had to survey was the whole of what Mr. Churchill called "the spacious domain of public health." Discussions with representatives of local government, the medical profession and the voluntary hospitals had already started. Later the government would put before the country a general statement of the plans to be submitted to Parliament.

### Parachuted Medical Units to Attend Wounded in Forward Areas

The success of parachuted medical units to attend to the wounded in the fighting in Tunisia is an advance in army medical service which promises to be revolutionary. During the operations a medical unit consisting of ten men, including a surgeon lieutenant, was dropped by parachute in a forward area close to the scene of fighting and attended in one day to 162 wounded or injured men. Of these only 1 died and but for the medical aid brought immediately to the spot the death roll must have been heavier. Several of the wounded had to have amputation on the spot and many others required the services of the operating table. The success of bringing the surgeon to the wounded instead of these to the surgeon must lead to the adoption in the British army of air borne medical units on a large scale. At present only the air borne divisions can land surgeons and ambulance units by parachute and glider. This particular parachuted unit in Tunisia took down with it in containers full dressing station equipment, operating apparatus and instruments, anesthetics, sterilizers, medicines and dressings. Normally an air borne medical unit is ready to operate on a seriously injured man within ten minutes of landing and is so self contained both for medical supplies and for food that it can carry on for several days without having additional supplies dropped for it. The abiding principle of the air borne divisions is that a man must always be physically fit, ready and alert. A high standard of personal smartness and cleanliness is demanded.

### Complete Pasteurization of Milk Urged on the Government

The minister of food received a deputation representing the British Medical Association, the National Association for the Prevention of Tuberculosis, the Joint Tuberculosis Council, the British Pediatric Association, the People's League of Health and other bodies to urge the complete pasteurization of milk. The acting chairman of the council of the British Medical Association said that there was no serious difference in the medical profession on the question of pasteurization. Prof. L. P. Garrod said that tuberculosis was deplorably common among dairy cattle; the percentage of milk samples containing tubercle bacilli was between 5 and 10. One third of the deaths from tuberculosis in children under 5 were due to the bovine organism. This meant two thousand deaths annually, and there was a much larger percentage of invalidism and crippling. Another disease of the cow transmitted to man was contagious abortion. Ordinary infectious diseases might also be transmitted, usually from contamination of the milk by the milker. All bacteria concerned in these diseases could be destroyed by moderate heat for a short time. Pasteurization did not alter flavor. Admittedly it destroyed some vitamin C, but this could be made up for by fruit juice.

Dr. Alan Moncrieff said that pediatricians were anxious about the possibilities of infections of the alimentary tract traceable to dangerous milk. Only pasteurization gave the guaranty of safety. There was no scientific evidence that raw milk conferred any sort of immunity. Even if it did, the price to pay would be too high.

Dr. C. O. Hawthorne, representing the People's League of Health, said that the public was attracted and misled by such terms as "clean" or "pure" milk; and even "accredited milk," which had received some official countenance, did not escape reproach. He preferred the term "safe milk," meaning pasteurized, the only guaranty against infection.

Replying to the deputation, than which he could not imagine a more influential one, the minister of food recognized the obligation of the government to obtain a milk supply which can do no harm, or, if this was not possible, to issue instructions as to how people should obtain reasonable security in the drinking of milk. He was at present engaged in collecting all the necessary information regarding the available machinery and competent labor to undertake the work which would give the security desired.

### Proposed Accident Service of the Future

At a meeting of the British Orthopedic Association Mr. Reginald Watson-Jones presented a report which was approved by the association, for a comprehensive accident service which should embrace the treatment of soft tissue injuries, infections of the hand, burns, tendon injuries, nerve injuries and indeed all injuries of the locomotor system. As these injuries are just as incapacitating as fractures, their importance to industry is just as great and they outnumber fractures greatly. It was held

that the problem would be solved better by reorganizing the accident departments of general hospitals than by forming special accident hospitals. The accident department must be reorganized, replanned and often rebuilt. There must be a separate organization and even a separate entrance for accident cases. The director of the accident service should be trained in every branch of surgery, experienced in orthopedic surgery and specially trained in the problems of trauma.

As the accident unit must provide a twenty-four hour service, the director must be aided by two first assistants in addition to the usual resident surgical officers, house surgeons and house physicians. There must be full secretarial and clerical assistance and social service personnel. Close liaison must be established with industrial medical officers in the area served by the unit. The rehabilitation of sedentary and light industrial workers could usually be completed within the hospital itself by physical therapy, occupational therapy and recreational therapy. For the more seriously injured who must return to heavy industry there must be a special rehabilitation annex with playing fields, swimming pools and gymnasiums. In such special centers the treatment would be continued by the same team, and they must remain under the same administration and surgical control as the parent hospital.

### Women to Be Paid the Same Compensation as Men for War Injuries

The demand that women should have the same rights as men has again been successful. In the House of Commons protest was made against women being paid lower compensation for war injuries than men. The government appointed a committee to investigate the subject. The reason for the difference is that compensation is related to earnings, which generally are lower for women than for men. The government has recognized that, as the Personal Injuries (Civilians) Scheme applies only to injuries associated with the war, there is an essential difference between it and any permanent scheme of compensation. It therefore has decided that the rates payable for disablement to gainfully occupied persons need not be related to earnings or to any other factor involving sex discrimination. Nongainfully occupied persons, including housewives, shall have their rates of injury allowance and disablement pension increased to those now paid to gainfully occupied men. The effect of the change is to raise the weekly compensation of gainfully occupied women from $7 to $9, which is that paid to men. This is paid while the injured person is unable to work, but if disablement continues after six months the compensation is replaced by a disablement pension graded according to the degree of disablement. The pension scale for this war is from $2 for 20 per cent disablement to $9.50 for total disablement. This is what the soldier receives. Hitherto among civilians only the civil defense man and the male earner had the benefit of this scale. The most that a woman could receive ranged from $1.50 for 20 per cent disablement to $7 for total disablement. Now all women will have the advantage of the men's scale.

### Big Fall in German Birth Rate

The special correspondent of the *Times* reports from the German frontier that deep concern is felt in Germany at the latest official figures for births published in the *Wirtschaft und Statistik*. In 1942 the number of live births was about 1,240,000, or 290,000 fewer than in 1941. When Hitler came into power in 1933 the birth rate was 14.7 per thousand. Consequent on the moral pressure exerted by the Nazi government reinforced by social legislation, the rate reached 18.4 in 1936, and 20.4 in 1939 and 1940 but fell to 18.8 in 1941 and to 15.2 in 1942. Thus almost the whole of the increase achieved by the pressure of the Hitler government has been lost.

## AUSTRALIA

*(From Our Regular Correspondent)*

March 27, 1943.

### The Development of Drug Manufacture in Australia

The development of drug manufacture in this country constitutes a remarkable wartime achievement. On the entry of Japan into the war, the local manufacture of drugs became a matter of supreme importance. Two distinct problems had to be overcome before local production could commence on a sufficiently large scale—processes and methods of production had to be worked out in the laboratory and in the field by highly skilled scientific workers, and the results of scientific work had to be applied to commercial production. To achieve this purpose the Medical Equipment Control Committee received the full cooperation of wholesale and manufacturing firms and of university and other scientific workers and such scientific bodies as the Council for Scientific and Industrial Research and the Australian Association of Scientific Workers. The results of their investigations have added a brilliant chapter to the story of Australian scientific research.

Drugs now being manufactured locally and from local materials in sufficient quantities for Australian needs include magnesium oxide, heavy magnesium oxide, magnesium trisilicate, sodium bicarbonate, chlorinated lime, phenol, proflavine, silver proteinates, zinc sulfate, alum, digitalis, caffeine, theobromine, sulfanilamide, sulfaguanidine, atropine, barium sulfate, ascorbic acid, nicotinic acid, scopolamine, chloral hydrate and chlorobutanol. Drugs which will soon be available include acetophenetidin, colocynth, phenolphthalein, kaolin, nikethamide, belladonna, ergot, gentian violet, salicylic acid, hexoestrol, dextrose, paraldehyde and phenobarbital.

The production of morphine direct from poppy hay is a triumph for Australian research workers. Under the new method the tedious process of obtaining opium from incised poppy capsules has been eliminated. As a result of the wartime shortage of cod liver oil a search for substitutes was made and vitamin rich oils are now being extracted from certain Australian sharks. Experiments have shown that oleum persicorum (peach kernel oil) forms a satisfactory substitute for olive oil.

Included in the work at present being undertaken by the Australian Association of Scientific Workers are local production of general, local, intravenous and rectal anesthetics, mercurial diuretics, antimonial drugs, organic arsenicals for intravenous and oral use and a number of other chemicals used in pharmacy.

### Manufacture of Surgical Instruments

At the outbreak of war there were only six skilled surgical instrument makers in Australia, and these were concerned mainly with the manufacture of highly specialized instruments and equipment. At that time the value of instruments produced in twelve months is estimated to have been less than £5,000. Today production has risen to an annual value of £300,000, and Australia is able to provide herself with practically all the essential equipment for use by surgeons. One of the most interesting achievements is the local manufacture of hypodermic syringes. An Australian firm is now producing more than a thousand syringes a week and is in a position to meet all demands likely to be encountered. These syringes are made from a special Australian heat resistant glass and Australian alloy metals. The finished product compares favorably with syringes previously imported from overseas. Parallel development is taking place in the field of laboratory apparatus and reagents. Australia in the near future should be independent of overseas supplies of most items of scientific glassware. Crucibles and other porcelain laboratory requisites are also being produced locally, and such items as precision grade analytic weights and analytic balances are now in the course of production.

# Deaths

**Albert Hammond Hoge** ✦ Bluefield, W. Va.; University College of Medicine, Richmond, 1908; in 1932 served as president of the West Virginia State Medical Association; elected president of the West Virginia Public Health Council in 1934; past president of the Mercer County Medical Society; served as a captain in the medical corps of the U. S. Army during World War I; fellow of the American College of Physicians; specialist certified by the American Board of Internal Medicine; a member of the staff and part owner of St. Luke's Hospital; served as president of the Rotary Club; aged 57; died, April 8, of heart disease.

**Herbert Bancroft Priest,** Ayer, Mass.; Harvard Medical School, Boston, 1901; member of the Massachusetts Medical Society; served during World War I; lieutenant colonel in the medical reserve corps of the U. S. Army not on active duty; served as chairman of the school committee, trustee of the library and member of the board of health; on the staff of the Community Memorial Hospital; formerly a contract surgeon for the Civilian Conservation Corps at Fort Devens; recently a recruit examiner; aged 68; died, March 12, of coronary thrombosis.

**Vivian Lionel Benson,** Warwick Neck, R. I.; Baltimore University School of Medicine, 1897; aged 69; died, March 19, of hypertensive heart disease.

**John William Blackett,** Fort Covington, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1898; member of the Medical Society of the State of New York; member of the attending staff of the Alice Hyde Memorial Hospital, Malone; served as coroner of Franklin County; since 1918 health officer of the town of Westville; school physician; aged 69; died, March 22, of cerebral thrombosis and arteriosclerosis.

**Alexander Dunlap Blaine,** Dry Ridge, Ky.; Kentucky School of Medicine, Louisville, 1890; member of the Kentucky State Medical Association; aged 76; died, March 26, of nephritis.

**Elmer Francis Blank** ✦ Bridgeport, Conn.; Starling Medical College, Columbus, 1897; served as president of the city board of health; on the staff of St. Vincent's Hospital; aged 72; died, March 21, of pernicious anemia.

**Wyatte Clinton Boylston,** Charlotte, N. C.; Medical College of the State of South Carolina, Charleston, 1913; aged 53; died, March 30, in the Mercy Hospital of coronary occlusion.

**Herman A. Brennecke** ✦ Aurora, Ill.; Rush Medical College, Chicago, 1896; past president of the Kane County Medical Society; a member of the Chicago Pathological Society; for many years a member of the board of education; founder and head of the Brennecke Clinic; surgeon for the Chicago Burlington and Quincy, the Chicago and Northwestern, the Chicago Milwaukee and St. Paul, the Elgin, Joliet and Eastern and the Chicago, Aurora and Elgin railroads; aged 71; died, March 20, of carcinoma.

**George Stewart Brown** ✦ New Orleans; Medical Department of Tulane University of Louisiana, New Orleans, 1904; also a pharmacist; formerly associate professor of pharmacy at his alma mater; treasurer of the Louisiana State Pharmaceutical Association from 1897 to 1921; aged 76; died, March 20, in the Southern Baptist Hospital of arthritis of the spinal column.

**Arthur Conklin Brush** ✦ New York; College of Physicians and Surgeons, New York, 1884; an Affiliate Fellow of the American Medical Association; fellow of the American College of Physicians; consultant to the Kings County, Coney Island and Brooklyn Eye and Ear hospitals and the House of St. Giles the Cripple, Brooklyn; aged 80; died, March 17, in the Methodist Hospital, Brooklyn, of bronchopneumonia.

**Charles Evans Buchanan,** Claremont, N. H.; University of Vermont College of Medicine, Burlington, 1906; member of the New Hampshire Medical Society; past president and vice president of the Sullivan County Medical Society; school physician; on the staff of the Claremont General Hospital; aged 61; died, March 23, in Reading, Vt., of cerebral thrombosis due to arteriosclerosis.

**William Thomas Burleigh,** Pittsburgh; Bellevue Hospital Medical College, New York, 1884; member of the Medical Society of the State of Pennsylvania; served in the medical corps of the U. S. Army during World War I; councilor of the Academy of Science and Art; aged 80; formerly on the staff of the South Side Hospital, where he died, March 23, of arteriosclerosis.

**William Meade Burwell** ✦ Chincoteague, Va.; Medical College of Virginia, Richmond, 1895; acting assistant surgeon, U. S. Public Health Service; past president of the Accomac County Medical Society; bank president; member of the county school board; aged 76; died, April 2, in the U. S. Marine Hospital, Baltimore, of arteriosclerotic heart disease and bronchopneumonia.

**Charles Bernard Busta,** Cedar Rapids, Iowa; State University of Iowa College of Medicine, Iowa City, 1905; on the staff of the Mercy Hospital; aged 60; died, March 14, of nephritis.

**Eugene Campbell,** Los Angeles; New York Homeopathic Medical College, New York, 1878; aged 86; died, March 13, in Inglewood of coronary thrombosis.

**Saverio Cerullo,** Waterbury, Conn.; Tufts College Medical School, Boston, 1936; diplomate of the National Board of Medical Examiners; served on the staffs of the Waterbury and St. Mary's hospitals and Chase Clinic; aged 33; died, March 26, in the Trudeau (N. Y.) Sanitarium of pulmonary tuberculosis.

**Joseph Kelsey Chipp,** Rose Hill, Kan.; Central Medical College of St. Joseph, Mo., 1899; aged 67; died, March 21, of coronary occlusion.

**George Clay Coates,** Butler, N. J.; University of the City of New York Medical Department, New York, 1888; for two years mayor of Butler and for six years served on the borough council; served as a captain in the medical corps of the U. S. Army during World War I; aged 77; died, March 26, of pneumonia.

**Joseph Bernard Corley,** Webster Groves, Mo.; Missouri Medical College, St. Louis, 1888; aged 79; died, March 18, of heart disease.

**Warren Fales Draper Jr.** ✦ Arlington, Va.; George Washington University School of Medicine, Washington, D. C., 1939; assistant surgeon in the U. S. Public Health Service; served his internship at the U. S. Marine Hospital, San Francisco; formerly stationed at the U. S. Marine Hospital, Boston, and the U. S. Quarantine Station at Miami, Fla.; organized the health unit in the Lamar County (Texas) military area; aged 30; died, May 17, in Walter Reed General Hospital, Washington, D. C., of brain tumor.

**James A. Duff,** Dundee, Ky.; Hospital College of Medicine, Louisville, 1904; member of the Kentucky House of Representatives; formerly a member of the county board of education; aged 67; died, March 20, of leukemia.

**Philip Roche Dwyer** ✦ Salem, Mass.; Harvard Medical School, Boston, 1920; visiting surgeon on the staffs of the Boston City Hospital, Salem Hospital, Josiah B. Thomas Hospital, Peabody, and the Danvers (Mass.) State Hospital; aged 49; died, February 28, of a ruptured diverticulum.

**John Christopher Dyer,** Penns Grove, N. J.; George Washington University School of Medicine, Washington, D. C., 1912; aged 67; died, March 25, of coronary thrombosis and arteriosclerosis.

**William H. Finn,** Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; aged 73; served on the staff of St. Anne's Hospital, where he died, April 22, of heart disease.

**Stanley Edward Graham** ✦ St. Francisville, La.; Memphis (Tenn.) Hospital Medical College, 1910; for many years mayor of Melville and coroner of St. Landry Parish; aged 54; died, March 25, of angina pectoris.

**Charles J. Gremer,** Long Branch, N. J.; Baltimore Medical College, 1909; for fourteen years served as city physician; a member of the staff of the Dr. E. C. Hazard Hospital; aged 57; died, March 23, of cirrhosis of the liver.

**William Cory Hand** ✦ Hartley, Iowa; Northwestern University Medical School, Chicago, 1906; veteran of the Spanish-American War and World War I; city health officer; owner and medical director of a hospital bearing his name; aged 65; died, March 22, of coronary thrombosis.

**Charles A. Heaton,** McCutcheonville, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 87; died, March 22, in Tiffin of carcinoma of the kidney.

**Charles Russell Henderson,** Reading, Mass.; Boston University School of Medicine, 1889; member of the Massachusetts Medical Society; for many years school physician; member of the board of health of Reading; on the staffs of the Melrose (Mass.) and Winchester (Mass.) hospitals; aged 75; died, March 31, of coronary occlusion.

**Hiram H. Hensley,** Richmond, Ky.; Louisville Medical College, 1906; aged 63; died, March 27, in Hollywood, Fla., of carcinoma of the lung.

**John A. Holland,** Upper Montclair, N. J.; New York University Medical College, New York, 1898; served in the medical corps of the U. S. Army during World War I; aged 75; died, March 22, of heart disease.

**Oscar House,** De Soto, Ill.; St. Louis College of Physicians and Surgeons, 1907; member of the Illinois State Medical Society; served at one time as mayor of De Soto; served during World War I; aged 66; was killed, March 17, when his car was struck by a train.

**John Valentine Hughes,** Los Angeles; Cooper Medical College, San Francisco, 1896; formerly served on the staff of the Lane Hospital, San Francisco, and as superintendent of the San Francisco Hospital; aged 70; died, February 26, in the Queen of Angels Hospital of bronchopneumonia.

**Carl Haller Ill** ✦ Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1918; fellow of the American College of Surgeons; attending obstetrician to the Essex County Hospital for Contagious Diseases, Belleville, and Hospital of St. Barnabas and for Women and Children; member of the board of trustees of the Newark Museum; secretary of the Maternal Welfare Board of New Jersey; aged 50; died, March 28, in Mantoloking of coronary thrombosis.

**Edward Ambrose Keyes** ✦ Brooklyn; Long Island College Hospital, Brooklyn, 1911; on the staff of St. Mary's Hospital; aged 57; died, March 16, of carcinoma of the colon.

**Edward Francis King,** Anderson, Ind.; University of Louisville (Ky.) Medical Department, 1911; formerly on the staff of the Logansport (Ind.) State Hospital and St. John's Hickey Memorial Hospital; aged 55; died, March 31, of hypertension.

**Benjamin G. Long,** Buffalo; University of Buffalo School of Medicine, 1883; member of the Medical Society of the State of New York; formerly clinical instructor in obstetrics at his alma mater; aged 84; died, March 8, of cerebral thrombosis.

**Milton McNeilan,** Safety Harbor, Fla.; Kentucky School of Medicine, Louisville, 1889; formerly on the staff of St. Joseph's Hospital, Parkersburg, W. Va.; aged 78; died, March 18, in West Union, Ohio, of cerebral hemorrhage.

**John William Melick,** Columbus, Ohio; Ohio Medical University, Columbus, 1896; aged 72; died, March 1, in the Grant Hospital of carcinoma of the prostate.

**John Lee Meyers,** Shepherdstown, W. Va.; Baltimore Medical College, 1903; president of the Peoples Bank, Charles Town, and a director of the Jefferson Security Bank; served on the staff of the City Hospital, Martinsburg; aged 68; died, March 22, in the Charles Town (W. Va.) General Hospital of acute dilatation of the heart, chronic nephritis and hypertension.

**John Baker Miller** ✦ Long Beach, Ind.; Marion-Sims College of Medicine, St. Louis, 1893; Barnes Medical College, St. Louis, 1896; member of the Illinois State Medical Society; served as assistant physician to St. Louis Female and City hospitals, St. Louis; aged 86; died, April 3, at his winter home in Lake Worth, Fla.

**Carl E. Moehle,** Brooklyn; Jenner Medical College, Chicago, 1902; aged 81; died, March 24, in Hempstead, N. Y., of pneumonia and arteriosclerosis.

**Francis Alden Moore,** Yankton, S. D.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1898; mayor of Yankton; served on the staff of the Sacred Heart Hospital; aged 71; died, March 24, of coronary thrombosis.

**Albert Johnson Newman** ✦ Hammond, La.; Memphis (Tenn.) Hospital Medical College, 1905; past president of the Tangipahoa Parish Medical Society; health officer of Hammond; aged 63; died, March 27, in New Orleans of spinal meningitis.

**Thomas Jesse Oliver,** Green Bay, Wis.; Wisconsin college of Physicians and Surgeons, Milwaukee, 1898; past president of the Brown-Kewaunee Counties Medical Society; formerly city physician and health officer of Green Bay; member of the staff of St. Mary's Hospital; aged 68; died, March 13, of thrombosis.

**Sylvanus Purdy,** White Plains, N. Y.; Bellevue Hospital Medical College, New York, 1897; member of the Medical Society of the State of New York and the American Urological Association; served overseas during World War I; lieutenant colonel and executive officer of the 56th Infantry Regiment of the New York Guard; member of the staffs of the White Plains and St. Agnes hospitals, White Plains, and the Grasslands Hospital, Valhalla; aged 66; died, March 2, of heart disease.

**George Brackett Rice,** Brookline, Mass.; Boston University School of Medicine, 1886; member of the Massachusetts Medical Society; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; professor emeritus of laryngology and rhinology at his alma mater; consulting surgeon, nose and throat department, Massachusetts Memorial Hospitals; formerly a member of the medical board of the Westboro (Mass.) State Hospital; aged 83; died, March 28, of heart disease and parkinsonism.

**Robert Lee Richardson,** Franklin, Tenn.; University of Tennessee Medical Department, Nashville, 1893; aged 75; died, March 20, of bronchopneumonia.

**Simon Richmond,** Boston; Harvard Medical School, Boston, 1897; member of the Massachusetts Medical Society; aged 70; died, February 5.

**Ruby Theodore Scott,** Fort Lee, N. J.; Vanderbilt University School of Medicine, Nashville, Tenn., 1917; formerly health officer of Fort Lee; aged 57; was found dead, March 17, of coronary sclerosis and occlusion.

**Clarence A. Smith** ✦ Monte Vista, Colo.; St. Louis University School of Medicine, 1905; aged 58; died, February 20.

**Flem D. Smith** ✦ Blytheville, Ark.; Memphis (Tenn.) Hospital Medical College, 1911; for many years secretary of the Mississippi County Medical Society; served as councilor of the First District of the Arkansas Medical Society; formerly city and county health officer; at one time local surgeon for the Frisco Railroad; aged 62; died, March 27, of cerebral hemorrhage.

**John Holmes Smith Jr.,** New Orleans; University of Maryland School of Medicine, Baltimore, 1905; member of the Louisiana State Medical Society; formerly associated with the U. S. Public Health Service; instructor in medicine at the Tulane University of Louisiana School of Medicine; medical examiner on the draft board; conducted an outpatient clinic at the Charity Hospital; on the staff of the Baptist Hospital, where he died, March 27, of glioma of the brain, aged 60.

**William Ballance Smith,** Atlanta, Ga.; Tulane University of Louisiana School of Medicine, New Orleans, 1936; surgical consultant, the Aetna Casualty and Surety Company; aged 37; died, March 22, in Beaumont, Texas, of coronary thrombosis.

**William Lewis Steen,** New Castle, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1905; member of the Medical Society of the State of Pennsylvania; for many years health officer of New Castle; served during World War I; aged 68; died, March 18, in the Veterans Administration Facility, Aspinwall, of nephritis.

**Alexander Michael Steinfeld** ✦ Columbus, Ohio; Starling Medical College, Columbus, 1897; member of the Clinical Orthopaedic Society and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; served as a captain in the medical corps of the U. S. Army during World War I; formerly assistant professor of surgery at the Ohio State University College of Medicine; aged 70; on the staff of the Grant Hospital, where he died, March 25, of coronary thrombosis.

**William Austin Tansey,** South Orange, N. J.; University and Bellevue Hospital Medical College, New York, 1912; member of the Medical Society of New Jersey; member of draft board number 34; on the courtesy staff of the Orange Memorial Hospital, where he died, April 4, of arteriosclerosis and coronary occlusion, aged 61.

**Edwin Pratt Woolard,** Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1920; aged 48; died, March 7, in the Hahnemann Hospital.

## MERCHANT MARINE CASUALTIES

**Joseph Grabenstein,** Woodside, N. Y.; Baltimore University School of Medicine, 1898; member of the National Gastroenterological Association; formerly on the staff of the New York Polyclinic Medical School and Hospital, New York; ship surgeon in the U. S. Merchant Marine; aged 65; was killed, February 7, in the North Atlantic Ocean when his boat was torpedoed by a submarine.

**Charles Immanuel Loeble,** Brooklyn; Albany (N. Y.) Medical College, 1912; ship surgeon in the U. S. Merchant Marine; aged 55; died in enemy action, February 3, when the ship on which he was serving was torpedoed off Iceland.

# Bureau of Investigation

## MISBRANDED PRODUCTS

### Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act and in cases in which they refer to drugs and devices they are designated D. D. N. J. and foods, F. N. J. The abstracts that follow are given in the briefest possible form: (1) the name of the product, (2) the name of the manufacturer, shipper or consigner, (3) the date of shipment, (4) the composition, (5) the type of nostrum, (6) the reason for the charge of misbranding and (7) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration.]

**Alimentone Powder and Alimentone Tablets.**—Thomas E. Collins Company, San Francisco. Shipped July 15, 1940. Composition: Powder—essentially a spray-dried product such as a spray-dried skim milk, with embryonic tissues such as wheat germ, and dried green leafy and stemmy material such as garden vegetables; Tablets—essentially the same ingredients as the powder except for the spray-dried substance. Powder misbranded because falsely represented as a suitable and effective treatment for overweight. Tablets misbranded because directions for asthma victims were false and misleading, since they would not constitute an appropriate treatment for cases of overweight or asthma. Both products misbranded because falsely represented to constitute treatments for overweight, give relief in colds, catarrh, asthma, bronchitis, hay fever, mucous colitis, vaginal catarrh and other catarrhal conditions and be effective in maintaining the normal flow of secretions from the mucous membranes; continually flush away any impurities lodging in cell tissues, supply nutritional elements required by the body to maintain actively its defensive reaction against impurities and bacteria in cell tissue; keep the membranes in healthy condition and eliminate toxic deposits from tissues in bronchial asthma.—[*D. D. N. J., F. D. C. 510; September 1942.*]

**Elsaco Mineralized Water.**—Electrovita Company, Redwood City, Calif. Shipped Dec. 3, 1940. Composition: essentially lime water containing a small amount of potassium iodide and traces of sulfates and chlorides. Misbranded because falsely represented as "a biologically pure mineral water," which would be effective for run-down nervous conditions, arthritis, painful joints, gallbladder disorders, headaches, nervousness, stomach ulcers, kidney ailments, toxic diseases, rheumatism, eczema, varicose veins and many other ailments. Further misbranded because, although the claim as to its having been treated by electrolysis might give the impression that this added to its therapeutic value, such was not the case.—[*D. D. N. J., F. D. C. 514; September 1942.*]

**Kephart's for Hair and Scalp.**—Kephart's H. & E. Foor Company, Los Angeles. Shipped Sept. 7, 1940. Composition: a mixture of mineral oil and saponifiable oils in which a small amount of methyl salicylate was dissolved. Misbranded because label carried a series of pictures showing children wtih various amounts of hair on their heads and accompanying notations, "Before . . . After six weeks . . . After ninety days" and "After consulting physicians who were unable to advise any beneficial treatment, our daughter's pictures show the amazing improvement since using Kephart's," which representations the government declared to be false and misleading, because the product was not effective in promoting the growth of hair.—[*D. D. N. J., F. D. C. 506; September 1942.*]

**La Bonita Hollywood Skin Stimulant and La Bonita Hollywood Texture Oil.**—House of Hollywood, Los Angeles. Shipped May 2, 1941. Composition: "Skin Stimulant"—essentially alcohol, glycerin, perfume and coloring material; "Texture Oil"—essentially a perfumed vegetable oil. The first named was misbranded because the term, "Texture Oil," together with the directions, "Pat into the neck and jaw line using a brisk slapping motion with the back of the hand. Non-fattening," were false and misleading since they gave the impression that the preparation would affect the structure of the skin, whereas it would not. Both articles misbranded under provisions of the law applicable to cosmetics.—[*D. D. N. J., F. D. C. 509; September 1942.*]

**Magnetic Ray Appliance.**—Magnetic Ray Company, Dallas, Texas. Shipped May 1, 1940. Composition: a coil made in the form of a belt to which was fastened a wire to be connected with an ordinary lighting current so as to produce a magnetic field. Misbranded because falsely represented to be an effective treatment for asthma, arthritis, anemia, Bright's disease, diabetes, deafness, eczema, epilepsy, goiter, heart diseases, obesity, paralysis and many other conditions, besides stimulating various glands and organs, increasing physical and mental efficiency, clearing the complexion, causing absorption of growths and deposits such as tumors, goiters and blood clots and favorably affecting circulation, elimination, digestion, nutrition and metabolism.—[*D. D. N. J., F. D. C. 518; September 1942.*]

**McFadden 3 Sisters Springs Mineral Water.**—McFadden 3 Sisters Springs, Hot Springs National Park, Ark. Shipped Aug. 8, 1940. Composition: calcium bicarbonate (2.77 grains per quart) and smaller proportions of other mineral constituents commonly found in ground waters. Misbranded because falsely represented as efficacious in treating Bright's disease, diabetes, dropsy, pus in kidney, bladder and urethra, low blood pressure, enlarged prostate gland, paralysis, female irregularities, insomnia, anemia, nervous prostration and some other disorders, as well as helping to restore and maintain health in apparently hopeless cases and to rejuvenate shattered nerves and weakened bodies, besides keeping the body tissues, fluids and organs in perfect running order, clarifying the blood, promoting safer repair, eliminating waste and doing a good many other things.—[*D. D. N. J., F. D. C. 515; September 1942.*]

**Merlek Mineral Water.**—Lee Brothers, Oakland, Calif. Shipped May 18, 1940. Composition: approximately nothing but sea water. Misbranded because falsely represented to remedy mineral deficiencies and to help persons suffering from collapse, excess acid, rundown conditions and many other ailments, besides being valuable in maintaining health and assuring proper growth, good teeth and blood for life.—[*D. D. N. J., F. D. C. 513; September 1942.*]

**Mineralaid.**—W. L. Jameson, Denver. Shipped March 17, 1941. Composition: essentially silicates, small amounts of iron and calcium compounds, sulfates, a trace of fluorides, and nondescript organic material. Misbranded because falsely represented to give the user health, afford relief in cases of hay fever, asthma, sinus trouble, arthritis, goiter, stomach ulcers, anemia, prostatic disorders, liver, kidney and bladder ailments, cancer, diabetes, infantile paralysis, pyorrhea, hemorrhoids, cataracts, pneumonia and many other things, besides reducing weight and correcting dietary mineral deficiencies.—[*D. D. N. J., F. D. C. 512; September 1942.*]

**Oomph Candy.**—Nu-Pak-Ej, Inc., Chicago. Shipped Oct. 21, 1941. Composition: essentially sugars, protein, fat, soybean flour and small amounts of table salt, phosphates and calcium compounds. Misbranded because falsely represented as effective for safe reduction of weight, in conjunction with the dietary program given in the labeling, for providing a proper method of "slenderizing" or losing excessive weight. Further misbranded under the provisions of the law applicable to foods as reported under F. N. J. 2537.—[*D. D. N. J., F. D. C. 511; September 1942.*]

**Overnight Hair-A-Gain.**—Georgia O. George, Los Angeles. Shipped Oct. 19, 1940. Composition: essentially a semisolid soap with tar. Misbranded because label gave false impression that the product would effectively promote the growth of hair and also because label did not bear the common or usual names of the active ingredients.—[*D. D. N. J., F. D. C. 527; September 1942.*]

**Regol.**—Cleveland Von Company, Cleveland. Shipped Nov. 26, 1940. Composition: a mixture of bile and plant drug extracts dissolved in alcohol (26 per cent) and water. Misbranded because of false and misleading representations that it would be a rational and effective remedy for diseases of the liver, digestive disorders, fermentation and gas in the intestines, sick headache, chronic constipation, colitis and many other internal disorders, as well as for sallow, blotched and itchy skin.—[*D. D. N. J., F. D. C. 502; September 1942.*]

**Remas Oil of Herbs (formerly Rheumaster).**—Requa Manufacturing Company, Brooklyn. Shipped Aug. 20, 1940. Composition: oils such as sassafras, and those of coniferous trees. Misbranded because representations in and on the package as to its alleged efficacy in treating rheumatism and neuritis were false and misleading, since it would not be effective for such purposes.—[*D. D. N. J., F. D. C. 503; September 1942.*]

**Thermo-Roller.**—Thermo-Roller Corporation, New York. Shipped Feb. 24, 1940. Composition: a device in the form of a rolling pin, covered with corrugated rubber and electrically heated. Falsely represented to enable one to achieve a completely balanced figure without special effort by concentrating on the spot or area most out of proportion; to be efficacious in reducing abdomen, hips, thighs and "dowager's hump" between the shoulders, remove local fat deposits, eliminate fat cell elements and be effective in treating sciatica, rheumatism, arthritis, lumbago and other common nervous disorders.—[*D. D. N. J., F. D. C. 516; September 1942.*]

**Tonico Fir-Veta.**—El Modelo Medicine Company, San Antonio, Texas. Shipped Nov. 25, 1940. Composition: essentially strychnine and quinine salts, with alcohol, syrup and small amounts of iron, calcium manganese and potassium compounds, including hypophosphites. Misbranded because of false and misleading representations that it would efficaciously promote, retain and insure health, aid Nature in her work in keeping one well and restore health, thus bringing lasting happiness; rebuild children, increase their resistance, enable them to gain weight, relieve them of overtension and cause them to sleep more restfully; tone up the system, stimulate or restore the appetite, enable one to gain additional energy, prevent tired, nervous, disordered stomach, sluggish bowels and loss of appetite, increase the vitality of working girls, and help in keeping the nerves fit. Further misbranded because of the label claim, "El Modelo Medicine Co. has complied with the new Federal Food, Drug, and Cosmetic Act."—[*D. D. N. J., F. D. C. 504; September 1942.*]

**Torso Herb Vitamin.**—John Walters, Baltimore. Shipped Oct. 11, 1939. Composition: essentially a fatty oil, an organic sulfur compound, turpentine oil, cade oil, methyl salicylate, alcohol and water, with extracts of plant drugs including aloe and ginger. Misbranded because falsely represented on label as useful in treating nephritis, diabetes, dropsy, high blood pressure and kidney, stomach and bladder disorders.—[*D. D. N. J., F. D. C. 505; September 1942.*]

# Correspondence

## ABSENTEEISM

*To the Editor:*—There is at present a great deal of justified comment on the widespread problem of absenteeism in war industry. A number of clear studies have demonstrated that the question is not simple and demands an attack from many different sides, a very important one being the rejuvenation of the workers' sense of pride and responsibility.

There is, however, one phase of this inquiry, relatively small yet important, which is generally overlooked and which can be handled, in large measure, by the family physician. Briefly stated, the real contribution he can make is to take a just, firm stand on requests for "certification."

These requests fall roughly into three types, which I will describe in the order of their importance:

Request for leave of absence because of illness: The generous family physician too often recommends long holidays for minor disorders. A recent example comes to mind. A young woman came to the hospital with a note from her doctor asking that she be granted four to six weeks leave of absence for laryngitis. Careful examination by a certified specialist revealed trivial congestion of the vocal cords. The patient was informed that such a leave could not be granted and she stormed out of the hospital in a fit of anger. Numerous similar instances could be cited in which holidays ranging from two to four weeks have been requested for slight, easily corrected disorders. It is not only unpleasant but, for various reasons, also quite imprudent to contradict the family physician; yet this often has to be done. In this emergency it is the function of every physician to see to it that healthy workers are kept on the job as regularly as is humanly possible.

Request for change of shift, the second source of trouble: Most people do not care to work at night. They will think of every conceivable medical excuse and ask the busy family doctor to certify it. In one "the night air is unhealthy"; in another "it strains his eyes"; in another "it aggravates constipation"; in still another "it is causing bronchitis." When such requests are denied by the industrial physician, discontent and a feeling of unfair treatment are created. As a result, workers are determined to "get even" at the first opportunity and take unwarranted time off. A few sympathetic moments with a firm, unprejudiced family doctor could eliminate this source of friction.

Request for change of job, the last common trouble maker: It is astounding to note how readily the family doctor certifies that certain fumes, gases, vapors or dusts (about which the patient is poorly informed) are "dangerous" and "poisonous" to the patient, who must immediately be removed to another safer job. It is hardly necessary to point out that every possible precaution is taken in modern plants to safeguard the worker against hazardous exposure. By simply inquiring by telephone what material is used, what the hazard really is and what precautions are being taken, the family doctor can avoid panic, confusion and unnecessary "layoff" to "clear the body" of these alleged poisons.

These special problems are aired with no critical or malevolent intent. The family physician is extremely busy these days and can hardly be expected to be aware, always, of the difficulties of wartime industry. My plea is simply this: Let there be more cooperation between the local and the plant physician. With more consultations there will be fewer conflicts and more man-hours saved.

ANDREW M. BABEY, M.D., Brooklyn.
Chief Medical Examiner, Sperry Gyroscope Company, Inc.

## "CLAUDE BERNARD" BY IZQUIERDO

*To the Editor:*—I am thankful for the notice of my book "Bernard, creador de la medicina científica," published in THE JOURNAL, January 2, page 90, a notice which, I am sorry to say, I did not know about till recently. May I ask you to excuse me for clarifying three assertions in the notice, which, although apparently inspired in the contents of the book, are not quite in accordance with them?

The three assertions are that (1) the first Spanish translation of Bernard's Introduction "appeared in Mexico in 1880," (2) the second translation, by don Carlos García, was a "more concise translation, itself a classic," and (3) that such a translation was published in the somewhat obscure village of San Luis Potosí."

What I have to say in connection with these three assertions is that:

1. On page xiii, line 6, of my book it is stated very plainly that the first Spanish translation was made in Spain in 1880.

2. What I asserted in connection with García's translation, at the beginning of the second paragraph on page xi, was that after revision of it I had discovered that it was vitiated by numerous and at times crude errors, which I deemed due to García's (who was a lawyer) lack of preparation in the biologic sciences. Thus I was far from declaring his version a classic.

3. As to San Luis Potosí, let me say that it is more than an obscure village; it is the capital of one of our states and for a number of years has been a center of culture in the central part of the country.

J. JOAQUIN IZQUIERDO, M.D.,
Colima Num. 367,
Mexico, D. F.

## SMALLPOX VACCINATION REACTIONS

*To the Editor:*—Every physician should be acquainted with the three types of reactions which follow smallpox vaccination. All reactions fall within one of the three groups, vaccinia, vaccinoid or immune reaction.

The vaccinia, or primary take, is the reaction obtained when one who has no immunity is vaccinated with a potent cowpox virus. The site of vaccination should not be larger than ⅛ inch. If the multiple puncture method is used, practically nothing can be seen at the site of the vaccination for the first two to four days. After this period of incubation is passed changes are quite rapid. First one or several macules form followed promptly with papules. These papules may become confluent as the vesicle forms. By the ninth day a definite pustule usually surrounded by an areola is present. At the time of the pustule the patient may suffer from a little malaise and have some fever. Following the pustule a scab forms. If the original vaccination site was not more than ⅛ inch and if no dressing was used on the vaccination, a scar not more than ⅜ inch remains.

The next type of reaction, the vaccinoid (sometimes referred to as an accelerated take) is one which has much significance, because it indicates a partial immunity to smallpox. This vaccinoid reaction occurs in one who either has previously had smallpox or has had a previous vaccinia or vaccinoid reaction. Over a period of years some people on revaccination about every five to seven years have a succession of vaccinoid reactions each one of which will leave a scar. These vaccinoid scars are usually smaller than the scar which followed the primary take.

The typical vaccinoid reaction goes through the stages that the primary vaccination does, i. e. the macule, papule, vesicle, pustule and scab. The reaction is more rapid, reaching the

apex on about the sixth day. In addition to being more rapid the local reactions are much milder, and the patient very seldom experiences malaise and fever.

The third type is called the immune reaction (sometimes called the immediate reaction). This reaction is frequently overlooked but it is so definite it should not be. As Jenner himself recognized it, I propose that it be called the Jenner reaction. If we spoke frequently about having a Jenner test made to see if we had immunity to smallpox, our attention would be called to this reaction and it would not be so frequently overlooked. This immune reaction is found in all persons who have an active immunity from either a previous case of smallpox, a vaccinia or a vaccinoid reaction. The reaction comes on about twelve hours after vaccination and it lasts for forty-eight to seventy-two hours. It consists of a macule or a papule—never a pustule. There is slight induration around the vaccination site caused by the inflammatory reaction of the body destroying the cowpox virus. If one rolls the vaccination site under the finger one gets a feeling of possibly a small pea being in the skin. If this Jenner reaction is present, the person is immune to smallpox and no more vaccinating of that individual is necessary at the time.

Smallpox vaccinations are not reported as positive or negative because these terms are inaccurate and usually meaningless. No greater mistake can be made in interpreting smallpox vaccinations than to say that vaccinia and possibly vaccinoid reactions are positive and others are negative. The word negative is usually considered to mean "no reaction." If one does not get a reaction following a smallpox vaccination, something is wrong with the technic. I have never seen a person whose arm was properly prepared and on whom a potent virus was used that did not give a reaction of some kind.

If a reaction does not occur even after several attempts one should never infer that the person is immune, because that may be far from the truth. Rather one should realize that the technic is at fault. I have seen at least 1 case of smallpox in a person who had been vaccinated five times and each vaccination reported "negative." That person thought that he was immune to smallpox because he did not get a take. If his vaccination had been properly done and properly observed he would have realized that he did not have a Jenner reaction, that the technic was at fault and that he did not have immunity to smallpox.

The use of the Jenner reaction is of great help in determining the immunity of contacts to a given case of smallpox. If a contact has a Jenner reaction he can immediately be released from quarantine. He does not have to wait to see if his vaccination is going to take nor does he have to be kept in quarantine for another revaccination because the first attempt was unsuccessful.

There is one other type of reaction which one sometimes sees when doing vaccinations. It is mentioned so that it will not be confused with the Jenner reaction. That is the reaction of allergy—allergy either to trauma or to some substance in the cowpox virus. This allergy reaction comes on a few minutes after the vaccination and leaves quite promptly. It fades away before the Jenner reaction begins to appear.

Every doctor doing vaccinations should see those vaccinated on the second day. If at that time the person shows a Jenner reaction, further observation is not necessary. A beginning vaccinia and vaccinoid will not show at that time.

If a reaction is not present on the second day the patient is told to report on the fifth or sixth day. If a vaccinoid reaction is present it will be at its height and the physician can so record the reaction and will not have to see the patient again.

If the vaccination is taking but has not reached its height on the fifth or sixth day, it is better to see the patient again on the ninth to eleventh day. Observe the vaccinia at its height. Check the patient to see that he is not using a celluloid shield or a bunion plaster on it. If the pustule is oozing and soiling the clothing, a piece of sterile gauze can be fastened to the clothing to protect the clothing. The process of vaccination is a septic one throughout. The skin must be kept in a normal healthy condition, so that secondary infection does not take place. Coverings which hold moisture cause a fungous growth around the vaccination. This in turn causes a maceration of the skin and produces a fertile field for secondary invaders. Large scars and extremely sore arms are usually caused by secondary infection and do not indicate any more immunity than a small scar with little reaction.

If a reaction is not found on the second or sixth day, the vaccination must be repeated, as either the virus was impotent or the technic was at fault.

L. B. GLOYNE, M.D., Kansas City, Kan.

## ALBINO RATS FOR PREGNANCY TESTS

*To the Editor:*—We have read with interest the communications in THE JOURNAL in regard to the use of rabbits in performing the urine pregnancy test. We are entirely in accord with the opinion that some substitute test should be developed so that a great saving in this important food animal may be made. We also agree that even though rabbits are used for this hormone test they are still edible if they are not infected by the injected urine. As they are killed forty-eight hours after injection of the urine there has been no long time interval for the rabbits to develop any serious infection, but still there is the possibility.

It has been known for some time that the female albino rat or allied strains can be used in place of the rabbit in the performance of this test. Several articles have already appeared in the medical literature in this regard and credit should be given to Dr. Udal J. Salmon and his co-workers from the laboratories of the Mount Sinai Hospital, New York, for development of a rational procedure (A Six Hour Pregnancy Test, *J. Clin. Endocrinol.* **2**:167 [March] 1942). It must be stated, however, that other authors have previously reported the use of the rat in performing this test. Drs. H. M. Evans and M. E. Simpson used rats in 1930 (*California & West. Med.* **32**:145 [March] 1930). Drs. Frederick Eberson and M. H. Silverberg obtained reliable results after thirty-six hours, using rats for injection of the urine (Anterior Pituitary Hormone in Urine, THE JOURNAL, June 27, 1931, p. 2176).

We have been studying this test for several years and have concluded that the rat is a suitable substitute for the rabbit and that there are several advantages in its use. We have just completed checking a series of 100 cases using the white rat and the rabbit in every instance. We are entirely satisfied with the results.

One word of caution, however, must be added. Experience in the reading of this test in rats is absolutely necessary, and care must be used in observation of the breeding and selecting of the rats for use.

T. L. RAMSEY, M.D.
A. P. FALKENSTEIN, M.D.
Toledo, Ohio.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### BOARDS OF MEDICAL EXAMINERS
### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, May 29, page 333.

### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* August 2-4. *Part III.* June and also at different times at various centers having 5 or more eligible applicants. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

### EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOGY: *Written.* Philadelphia, Sept. 27. *Oral.* Philadelphia, Nov. 5-6. Final date for filing application is August 16. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* Chicago, June 9-11. *Written.* Oct. 18. Final date for filing application is Sept. 1. Asst. Sec., Dr. William A. Werrell, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. Parts I and II.* New York City, June 4-5. Chicago, Oct. 8-9. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, October. Final date for filing application is July 1. Sec., Dr. Dean M. Lierle, 1500 Medical Arts Bldg., Omaha, Neb.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, Oct. 8. *Oral.* New York City, Nov. 20-21, and Cincinnati, Dec. 11. Final date for filing applications is Aug. 10. Starting July 1, 1943, Group I will be abolished. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Oct. 7. Final date for filing application is Aug. 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February. *Written.* Various centers, December. Final date for filing application is Nov. 1. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis, Minn.

# Miscellany

## SAMUEL BARD'S INOCULATION AGAINST SHEEP POX

Samuel Bard, the physician who directed the foundation of great medical centers in New York and who successfully treated George Washington for carbuncle, paid much attention to the care and breeding of sheep, particularly an imported Merino brand. In 1811 he published a book [1] in which the diseases of Merino sheep, mainly sheep pox (ovinia), occupy a large part. By the similarity of sheep pox to smallpox he was led to experiment with inoculation against sheep pox but without success. He found it difficult to inoculate the disease and when "the sheep or lamb took the disease, many died," but then he was not certain that the disease had not been taken before the inoculation. He concluded that a few took the disease from inoculation and went through the attack with safety, but he does not state whether any prevention resulted. He vaccinated 7 sheep with cowpox but "was not sure that one took the cowpock." He found the analogy between sheep pox and smallpox so close that if he should have the chance he would again attempt inoculation. It should be noted that Bard did not attempt to obtain any specific vaccine against sheep pox. Bard's experiment is a historically interesting early attempt to apply the principle of preventive inoculation, not vaccination, of smallpox to an animal disease.

1. Bard, Samuel: A Guide for Young Shepherds; or Facts and Observations on the Character and Value of Merino Sheep: With Rules and Precepts for Their Management, and the Treatment of Their Diseases, as Well as of Sheep in General, Collected from the Latest and Best Writers on These Subjects, and Confirmed by the Experience of the Author and His Friends, New York, 1811. See also Langstaff, John Brett: Doctor Bard of Hyde Park: The Famous Physician of Revolutionary Times, the Man Who Saved Washington's Life, New York, E. P. Dutton & Co., Inc., 1942.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Charitable Hospitals: Liability for the Negligence of Servants and Agents.**—The plaintiff, a special nurse, while caring for a pay patient in the defendant hospital, was injured through the negligence of a student nurse employee. She brought suit against the hospital, which disclaimed all liability on the ground that it was a charitable corporation and as such was not liable for the negligence of its servants. The trial court ruled apparently that, while a charitable corporation is not liable to a beneficiary of its charity for the negligence of its servants, the plaintiff was a stranger to the charity and hence could recover from the hospital for its servant's negligence. The hospital appealed to the United States Court of Appeals for the District of Columbia.

The courts of the several American states have held every possible way with respect to the liability of a so-called charitable hospital for the negligence of its agents and servants but, in the opinion of the Court of Appeals, on principle a charitable hospital should be subject to liability for the negligence of its servants and agents without regard to the persons injured by such negligence. For negligent or tortious conduct, said the court, liability is the rule; immunity is the exception. Generally charity is no defense to tort, and one who undertakes to aid another must do so with due care. The court then adverted to the fact that in many American jurisdictions when a charitable enterprise is formally institutionalized, such as by incorporation or by creating a trust, owing to a misapprehension of the law presently to be referred to, the burden of the negligence of the servant of the institutionalized charity is cast not on the charity but on the persons whom the negligence injures. But when an individual human being undertakes a habit or business of charity he does not acquire such an immunity for his negligent acts or for the negligent acts of his inferior functionaries. This, said the court, indeed is a strange distinction. The hospital may maim or kill the charity patient by negligence, yet the member of the medical staff operating or attending without pay or thought of it dare not lapse into a tired or hurried moment.

The court then discussed the historical background of the rule of immunity adopted in so many American jurisdictions. In 1846 in an English case, *The Feoffees of Heriot's Hospital* v. *Ross,* 1846, 12 Clark & Fin. 507, 513, 8 Eng. Reprint 1508, Lord Cottenham, in passing on an action for damages for the wrongful exclusion from the benefits of the charity and not for any personal injury inflicted in the operation of the charity on a beneficiary or other person, said by way of dictum:

> To give damages out of a trust fund would not be to apply it to those objects whom the author of the fund had in view, but would be to divert it to a completely different purpose.

Subsequent English cases, however, decided in 1866 and 1871 in effect overruled that dictum. Nevertheless, when the first American case involving the liability of a charitable institution for the negligence of its servants was decided in 1876 (*McDonald* v. *Massachusetts General Hospital,* 120 Mass. 432, 21 Am. Rep. 529) the dictum of Lord Cottenham formed substantially the basis of the decision holding the charitable hospital immune from liability, in apparent ignorance of the fact that the rule was already dead in England. From the Massachusetts case the doctrine spread with modifications throughout the United States. The court next considered the state of the law in this respect in the United States. Five states (Delaware, New Mexico, North Dakota, South Dakota and Vermont) appear to have no decisions on the subject. Eleven states (Arkansas, Illinois, Kansas, Kentucky, Maryland, Massachusetts, Missouri, Oregon, Pennsylvania, South Carolina and Wisconsin) apparently adhere to the rule of full immunity [1]

1. "Full immunity," as used by the court, is used in reference to a plaintiff's ability to maintain a suit rather than whether the charity may be liable under special circumstances, as for administrative negligence, or when there is insurance, or satisfaction may be had from business property. It means, therefore that ordinarily neither "strangers" nor "beneficiaries" may recover, though one or both may do so in exceptional situations, as indicated above.

from suits. Three states (Minnesota, New Hampshire and New York) and apparently a fourth (Oklahoma) have imposed unqualified liability on charitable hospitals for the negligence of their servants, the rule adhered to in England, Canada and New Zealand. In seven states (Alabama, California, Florida, Georgia, Idaho, Oklahoma and Utah) strangers to a charity and paying beneficiaries may recover, but the question has been reserved as to nonpaying ones. Colorado and Tennessee impose liability if the charity is protected by insurance, and Tennessee, Georgia and Mississippi, and possibly also Massachusetts and Pennsylvania, apply liability to the extent of property owned by the corporation and used not directly in carrying on the charitable enterprise but for business purposes to produce income for its support. In thirteen states (Connecticut, Indiana, Iowa, Louisiana, Michigan, Nebraska, New Jersey, North Carolina, Ohio, Rhode Island, Texas, Virginia and Washington) apparently strangers are allowed to recover but beneficiaries are denied relief. In the remaining seven states (Arizona, Maine, Mississippi, Montana, Nevada, West Virginia and Wyoming) there do not appear to be any cases involving strangers but there are decisions that accord immunity to the charity for injury to beneficiaries.

The court next discussed the policies supporting and the policies negating immunity for charitable hospitals. In support of immunity, said the court, the following reasons are commonly advanced: Liability, so it is contended, would (1) violate the donor's intention, (2) misappropriate the funds to unauthorized purposes and to persons not within the intended class of beneficiaries, (3) in effect, indemnify the trustees, if the charity is organized as a trust, against the consequences of their own or their subordinate's misconduct, (4) dissipate the fund in damages and deprive the favored class or the public of the charity's benefit and (5) deter donors from creating a charity or from adding to its funds by subsequent donations. When an attempt is made to modify the rule of immunity in some of the ways previously mentioned and to reconcile the modifications with the reasons advanced for immunity "the confusion comes to a climax." The modifications from full immunity fail to take into consideration that departure from the donor's intent, dissipation and deterrence also take place equally, whether damages are paid to a stranger or to a patient. The fact that in modern days insurance is available to guard against dissipation of funds takes much away from the argument that liability would tend to dissipate the charity's funds, if that argument ever were valid. However, said the court, we do not believe that holding a charity liable for the negligence of its servants would tend to dissipate its funds or to deter donations. No statistical evidence has been presented to show that the mortality or crippling of charities has been greater in states which impose full or partial liability than where complete or substantially full immunity is given. Nor is there evidence that deterrence of donation has been greater in the former. Charities seem to survive and increase in both, with little apparent heed as to whether or not they are liable for torts.

On the other hand, continued the court, we must weigh the cost of the charity's negligence to the victim, who must by himself bear the full burden of his injury. We must consider also that much of modern charity or philanthropy is big business in its field and has a capacity for absorption of loss which did not exist in the typical nineteenth century small hospital. Further, while the larger hospitals generally are not operated for profit, much of their revenue comes from paying patients. To that extent, at least, the institutions should not be regarded as charitable and the paying patient, if he is injured and cannot recover, pays twice that others may have healing where he has injury. Finally, in recent years the real deterrents to donation have been taxation and the fears of well informed persons concerning the future of large accumulations of property, which fears arise from economic trends much more fundamental than making charitable institutions liable for their torts. Among the factors calling for a policy of nonimmunity for hospitals are (1) the tendency of immunity to foster neglect and of liability to induce care and caution; (2) the departure in affording immunity from the general rule of liability; (3) the anomaly of exempting charitable corporations and trust funds when charity is not a defense to others, and (4) the injustice of giving benefit to some at the cost of injury to others and of the injured individual's having to bear the loss wrongfully inflicted on him at a time when the direction of the law is toward social distribution of losses.

Finally, the court undertook to discuss the so-called "stranger-beneficiary" distinction which motivated the trial court as it does the courts of so many states. Such a distinction as applied by those courts renders the hospital immune with respect to injuries inflicted on a beneficiary of a charity but holds the hospital liable for injuries inflicted on a stranger to the charity. If, said the court, immunity is founded on some form of ultra vires premise, there is no room for treating strangers and beneficiaries differently. So, too, paying damages to either class constitutes violating the donor's intention and misappropriating the fund to unauthorized purposes. If the matter is regarded as diverting the fund to persons not within the class intended for aid, it is impossible to assume that the donor intends every one except the special object of his bounty to have preparation. In reason the departure, in this respect, would be the greater when a stranger recovers since the beneficiary is in the hospital as an object of help and not as one whose last state is to be made worse than his first. No more tenable foundation exists in considerations of preserving the charitable fund, preventing its dissipation, depriving the intended class or the public of its succor, cutting off creative or sustaining donations and the like. The reasons already stated to show that these do not support unqualified immunity apply with equal force to a limited one, whatever its form or extent. If damages dissipate the fund or deter donations, they do so equally whether paid to a stranger or to a beneficiary. When account is taken of the numbers in both classes and the probable burden of risk toward each, the heavier risk perhaps is incurred in favor of strangers. The distinction contended for by the trial court favors at the expense of the only person the fund is created and maintained to aid. He alone is excluded. If preservation of the fund or encouragement of donation required immunity, neither could justify the distinction between stranger and beneficiary. If the charity can assume the risk as to all the rest of the world and survive it can do so for those it is designed to help. Finally, the idea of waiver is advanced, namely, that the beneficiary by accepting the tendered aid impliedly agrees that that is all he may accept and waives any right of recourse for wrong done, while strangers do not do so. The notion that there is any such agreement or waiver is entirely fictional. Usually the beneficiary is ill or hurt; he does not haggle about terms; he expects care, not carelessness. Few hospitals would announce a policy of requiring such a waiver as a condition of entrance, and few patients would enter under such a condition unless forced to do so by poverty. In that case there could be no real choice. The idea of waiver, therefore, as implied from reception of benefit, amounts merely to imposing immunity as a rule of law in the guise of assumed contract or renunciation of right when all other reasons are found insufficient to support the distinction.

The court accordingly concluded that an incorporated charity should be liable for the injuries inflicted by reason of the negligence of its servants and agents. The judgment in favor of the private nurse was accordingly affirmed.—*President and Directors of Georgetown College v. Hughes, 130 F. (2d) 810 (1942).*

# Society Proceedings

## COMING MEETINGS

HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, BEGINNING JUNE 7. DR. OLIN WEST, 535 NORTH DEARBORN ST., CHICAGO, SECRETARY.

American Academy of Tuberculosis Physicians, Chicago, June 9-10. Dr. H. J. Corper, 3800 East Colfax Ave., Denver, Secretary.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 10-12. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American College of Radiology, Chicago, June 6. Mr. Mac F. Cahal, 540 North Michigan Blvd., Chicago, Executive Secretary.

American Ophthalmological Society, Hot Springs, Va., June 10-12. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

Montana, Medical Association of, Billings, July 7-8. Dr. Thomas F. Walker, 206 Medical Arts Building, Great Falls, Secretary.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

## American Journal of Public Health, New York

**33**:113-200 (Feb.) 1943

Present Epidemiologic Basis of Environmental Sanitation. G. W. Anderson, Minneapolis.—p. 113.
A Physician Looks at School Dental Programs. G. M. Wheatley, New York.—p. 120.
Salmonella Typing in Public Health Laboratory. E. K. Borman, K. M. Wheeler, D. Evelyn West and F. L. Mickle, Hartford, Conn.—p. 127.
Isolation of Neisseria Flava from Genitourinary Tract of 3 Patients. C. M. Carpenter, Rochester, N. Y.—p. 135.
Pyrex Suspensions in Turbidimetric and Colorimetric Determinations: Standards of Comparison for Bacterial Suspensions and in Resazurin Test. F. J. Hallinan, Albany, N. Y.—p. 137.
Single Line Index as an Administrative Aid. V. A. Van Volkenburgh, Albany, N. Y.—p. 141.
Ways to Community Health Education. M. Gonzalez-Rivera, Mexico, D. F., Mexico.—p. 146.
Methods of Transmitting Material to Laboratory for Gonococcus Cultural Studies. O. F. Cox and Mary V. McDermott, Boston.—p. 149.
Action of Finely Divided Magnesium on Lungs. L. U. Gardner and A. B. Delahant, Saranac Lake, N. Y.—p. 153.
*Milk Borne Outbreaks Due to Serologically Typed Hemolytic Streptococci. T. D. Dublin, Evelyn F. H. Rogers, J. E. Perkins and F. W. Graves, Albany, N. Y.—p. 157.
Changes in Bacterial Cell Brought About by Action of Germicides and Antibacterial Substances as Demonstrated by Electron Microscope. S. Mudd, Philadelphia.—p. 167.
Epidemiologic and Experimental Observations on Possible Significance of Rodents in Suburban Epidemic of Poliomyelitis. C. W. Jungeblut, New York, and G. Dalldorf, Valhalla, N. Y.—p. 169.

**Milk Borne Outbreaks Due to Hemolytic Streptococci.**—During April 1942 a small milk borne outbreak of infection of the throat due to the hemolytic streptococcus occurred in a relatively isolated rural community of approximately 275 inhabitants. Incriminating milk was secured from a large cheese plant handling milk from three hundred and fifty-six producers. The outbreak involved 44, or 18 per cent, of 239 persons included in the study group; 77 per cent of the cases occurred in persons 15 or more years of age, 61 per cent of whom were males. All the cases occurred during three weeks. There were no deaths. Scarlatinal rashes were observed in 8 and, since the causative organism was able to elaborate erythrogenic toxin, it appears illogical to distinguish between cases of septic sore throat and scarlet fever. Articular manifestations (pain and limitation of movement) were experienced by 16 patients, but some also complained of severe polyarthritis with swelling, redness and tenderness about the joints. In 4 the migratory articular involvement clinically suggested active rheumatic fever; in these patients one to two weeks elapsed between throat symptoms and the articular manifestations. Throat cultures were secured at the time of or shortly after the acute episodes from 35 of the 44 patients; the cultures of 23 yielded hemolytic streptococci, those of 17 were identified serologically as Lancefield group A, of 2 as group B, of 3 as group D and that of 1 could not be classified. Although the cheese plant handled milk from 6,069 cows, it is believed that the cow responsible for the outbreak was located by means of Breed smear examination of cans of milk received at the plant and subsequent veterinary and bacteriologic follow-up of suspected herds. On the involved farm, prior to the outbreak there had been 1 case each of scarlet fever, sore throat and so-called "grip." The suspected cow had suffered an injury to a teat, followed by acute mastitis on manipulation of the injured part by the person with the sore throat. Hemolytic streptococci obtained from the throats of the people on the farm and from tissue from the udder of the cow at necropsy were of type 3. To prevent any possibility of transmitting infection through the cheese, that produced during the outbreak was embargoed and released only after it was reprocessed by a method involving its being heated above 170 F. for several minutes.

## American Review of Tuberculosis, New York

**47**:113-230 (Feb.) 1943

*Army X-Ray Examination for Tuberculosis: Army Physical Examination Teams in Southern New York District, Second Corps Area. D. E. Ehrlich, I. A. Schiller and H. R. Edwards, New York.—p. 113.
Combating Tuberculosis in Union of Socialist Soviet Republics. F. Levitin.—p. 121.
Seriousness of Minimal Pulmonary Tuberculosis. S. C. Stein and H. L. Israel, Philadelphia.—p. 125.
Unrecognized Tuberculosis in a General Hospital. J. E. Farber and W. T. Clark, New York.—p. 129.
The Heart in Pulmonary Tuberculosis: Studies of Auricular Complex in Electrocardiogram. T. T. Fox and H. S. Kremer, New York.—p. 135.
*Pulmonary Manifestations in Extrapulmonary Tuberculosis: Roentgenologic Study of 100 Cases. L. Tepper and G. Jacobson, Los Angeles.—p. 156.
Erythema of Extremities in Tuberculosis. L. S. Trostler, Albuquerque, N. M.—p. 168.
Functional Capacity of Contralateral Lung. W. K. Whitehead, Northville, Mich.; N. Whitman and B. Shacter, Detroit.—p. 173.
Collapse Therapy: Trends in Frequency and Type of Surgical Procedures in Treatment of Pulmonary Tuberculosis; Statistical Review of Institutional Experience During Five Year Period 1937-1941. G. J. Drolet, New York.—p. 184.

**Roentgen Examination for Tuberculosis.**—A review of the routine roentgen examination of 114,130 national guardsmen and selective service registrants in the Southern New York District of the Second Corps Area from Nov. 25, 1940 to April 1, 1941, Ehrlich, Schiller and Edwards point out, discloses that 1,304, or 1.14 per cent, were rejected under MR 1-9. Of these 1,156, or 1.01 per cent, were classified as chronic pulmonary tuberculosis, 435 as clinically significant and 721 as arrested. A subsequent complete study of the rejected men by the New York City Health Department revealed that the percentage reclassified as acceptable for army service after previous rejection on the basis of the paper film was half that of those disqualified on the basis of the 4 by 5 inch film. This evidence suggests that the screening by the 4 by 5 inch photoroentgenogram required greater conservatism in interpretation than the 14 by 17 inch paper roentgenogram. The financial saving to the government in the elimination from service of those with known tuberculous lesions may be estimated at $13,000,000. Because of the cooperation that the Southern New York Army Physical Examination Team has had from the Bureau of Tuberculosis of the New York City Department of Health in studying and following up the rejected registrants, it has been possible to reclaim subsequently a small but definite percentage of the men initially rejected because of suggestive shadows or of those who had bronchopneumonia which was only temporarily disqualifying.

**Pulmonary Manifestations in Extrapulmonary Tuberculosis.**—To determine whether a characteristic roentgen picture can be formulated and recognized as of hematogenous origin and whether or not such knowledge can be of practical import to the clinician in his management of tuberculosis, Tepper and Jacobson studied the roentgenograms of 100 patients with extrapulmonary tuberculosis who had had one or more chest films. They were seen in the wards or clinics from 1930 to 1941. Excluded from the study were patients less than 15 years of age and persons with tuberculous laryngitis, enteritis, meningitis and tuberculosis of the skin and eye. For comparison another 100 adults with pulmonary tuberculosis but with no clinical evidence of extrapulmonary tuberculosis were reviewed. In the first group 79 showed roentgen evidence of postprimary pulmonary involvement; the pulmonary lesions were fibrotic and calcific, apparently inactive, with proliferative, nodular and exudative manifestations decreasingly common in this order. The tendency of these lesions toward bilateral, symmetrical, apical and subapical distribution in 44 of the 79 suggests a hematogenous origin and emphasizes the systemic nature of the disease. There was roentgen evidence of cavitation in 15; the cavities were mostly thin walled with bilateral symmetrical distribution. Although the sputum of 12 was positive, only 1

showed evidence of bronchogenic spread. When multiple films were available, stability or regression of the pulmonary lesion and the absence of bronchogenic spread were the principal features. The chest films of the other 100 patients emphasized the acute exudative caseous nature of adult pulmonary tuberculosis with its tendency to bronchogenic spread. A few of the patients in the control group exhibited a pulmonary picture similar to that in those with known extrapulmonary foci. The ability to recognize the chronic disseminated or hematogenous form of pulmonary tuberculosis should be of value in prognosis and treatment to both the surgeon treating extrapulmonary tuberculosis and the tuberculosis specialist.

## Archives of Internal Medicine, Chicago

**71**:137-300 (Feb.) 1943

*Ventricular Tachycardia: Analysis of 36 Cases. C. Williams and L. B. Ellis, Boston.—p. 137.
Studies on Clinical Significance of Serum Proteins: II. Relationship Between Albumin Globulin Ratio, Albumin, Globulin and Total Protein. B. M. Kagan, Richmond, Va.—p. 157.
Sickle Cell Anemia in White Race: Report of Cases in Two Families. M. A. Ogden, Passaic, N. J.—p. 164.
Surgical Treatment for Cirrhosis: Prognosis Subsequent to Omentopexy. H. B. Cates, Los Angeles.—p. 183.
Action of Digitalis on Conduction in Syndrome of Short PR Interval and Prolonged QRS Complex. T. T. Fox, Janet Travell and L. Molofsky, New York.—p. 206.
Storage and Significance of Tissue Glycogen in Health and in Disease. S. Soskin, Chicago.—p. 219.
*Morphology of Erythrocytes in Erythroblastosis Fetalis. E. H. Reisner Jr.—p. 230.
Spontaneous Mediastinal Emphysema. R. M. Lintz, New York.—p. 256.
Progress in Internal Medicine: Review of Literature on Pituitary Gland (1940 and 1941). Alice G. Hildebrand and E. H. Rynearson, Rochester, Minn.—p. 262.

**Ventricular Tachycardia.**—The 36 cases of paroxysmal ventricular tachycardia that Williams and Ellis report are believed by them to be the largest series from one hospital. The cases were found among approximately 64,000 electrocardiograms made during twenty years. The electrocardiogram of 24 of the 36 revealed the attack to be uninterrupted, while in 12 the attacks were short and the periods interposed in between showed normal supraventricular conduction. These two types have been arbitrarily designated as "persistent" and "intermittent" tachycardia. Organic heart disease was present in all but 1 patient; in 28 it was of the degenerative type. Digitalis intoxication was clearly associated with the attack of 8, and it was the probable precipitating factor in 9 others. One patient had received large doses of both digitalis and quinidine prior to the onset of the attack. Attacks occurred in association with myocardial infarction in 6, and myocardial infarction was probably present in 3. Twenty-one patients died in the hospital, 8 during the attack and 12 (all but 1 of the remainder) within a month of its cessation. The prognosis is serious, but it is essentially the prognosis of the associated heart disease. The prognosis of the "intermittent" type was somewhat better than that of the "persistent" type.

**Erythrocytes in Fetal Erythroblastosis.**—Reisner tried to determine to what extent the blood picture in fetal erythroblastosis simulates the picture seen in experimental anemias due to autoantibodies. He made Price-Jones curves on the cord or peripheral blood of 12 cases of fetal hydrops and 12 of icterus gravis at the onset of illness. In 23 a characteristic biphasic curve, consisting of a normocytic and a macrocytic peak or two macrocytic peaks, was observed and in 1 a monophasic microcytic curve was observed. A blood smear in this last case revealed spherical microcytes, but three months later the smear was normal. The morphologic changes in the erythrocytes in fetal erythroblastosis resemble in some respects those observed in experimental hemolytic anemias due to antigen-antibody reactions. Examination of the blood smears of 6 cases of severe fetal erythroblastosis revealed varying numbers of megaloblasts, and postmortem examination of 4 cases revealed varying degrees of hepatic damage. The presence of megaloblasts and the macrocytosis, in part at least, may be the result of a deficient erythrocyte maturation factor due to hepatic damage. The blood destruction in the disease is believed to be best explained on the basis of an antigen-antibody reaction in the fetus. The hepatic damage may possibly be due to the same cause.

## Archives of Otolaryngology, Chicago

**37**:303-462 (March) 1943

*Facial Palsy of Otitic Origin, with Special Regard to Its Prognosis Under Conservative Treatment and Possibilities of Improving Results by Active Surgical Intervention: Account of 264 Cases Subjected to Reexamination. K. Kettel, Copenhagen, Denmark.—p. 303.
Reported Recoveries from Staphylococcic Meningitis, 1893-1941. W. J. MacNeal, Frances C. Frisbee and Anne Blevins, New York.—p. 349.
Treatment of Victims of Poison Gas, with Special Reference to Use of Bronchoscope. H. E. Mitchell, Lakewood, Ohio.—p. 371.
Osteitis Fibrosa Cystica: Differential Diagnosis, with Note on Repair of Maxillary Lesion by Cartilaginous Isograft. N. Fox and V. Taglia, Chicago.—p. 377.
Control of Head Noises: Their Illusions of Loudness and of Timbre. E. P. Fowler, New York.—p. 391.
Tuberculosis and the Otolaryngologist. W. F. Hulse, Cleveland.—p. 399.
Effect of Cigaret Smoke on *p*H of Throat. N. D. Fabricant, Chicago.—p. 404.
Abscess of Temporosphenoid Lobe: Review, with Report of Case Complicated by Petrositis. M. D. Grant, New York.—p. 411.
Review of Allergy for 1941. F. L. MacQuiddy, Omaha.—p. 440.

**Facial Palsy of Otitic Origin.**—The material on which Kettel bases his report was compiled in the Municipal Hospital in Copenhagen, and the 264 records comprise all the patients with peripheral facial palsy caused by acute suppurative otitis media admitted between 1906 and January 1938. No patient was observed for less than one year. Of the 264 patients 169 were reexamined; the fate of only 20 was unknown. When the reexamined patients are divided into those whose paralysis disappeared completely, those whose paralysis had apparently disappeared (being in evidence only during movements of the facial muscles but not in repose) and those whose paralysis had left its distinct marks on the face even at rest, it is seen that the majority of the conservatively treated patients fell into the first two groups.

## Bulletin of Johns Hopkins Hospital, Baltimore

**72**:65-126 (Feb.) 1943

*Experimental Demonstration That Periarteritis Nodosa Is Manifestation of Hypersensitivity. A. R. Rich and J. E. Gregory, Baltimore.—p. 65.
*Epidemic of Acute Respiratory Disease Associated with Atypical Pneumonia. H. A. Iverson, Baltimore.—p. 89.
Skin Sensitivity to Mycobacterial Tuberculins in Sarcoidosis. W. S. Brooke and R. Day, Baltimore.—p. 101.
Minimal Maintenance Requirement of Enzymic Casein Hydrolysate. A. J. Mueller, D. Fickas and W. M. Cox Jr., Evansville, Ind.—p. 110.

**Periarteritis Nodosa and Hypersensitivity.**—Rich and Gregory produced periarteritis nodosa in all of its details in rabbits by creating conditions similar to those obtaining in serum sickness in the human being. The aural flush and the rise in body temperature that occurred in rabbits a week after the injection of foreign serum were believed to be analogous to serum sickness in man. The widespread destructive vascular lesions produced in the rabbits exhibited all the characteristics of periarteritis nodosa. Actual aneurysm formation was not encountered, but it is often absent in human periarteritis nodosa. In many vessels the condition necessary for aneurysm formation was demonstrated. Had hypertension been present, the totally necrotic segment of the wall would have given way. The other local complication of periarteritis nodosa which occurs in some human cases, i. e. infarction from vascular occlusion, was encountered only once among the animals. The experiments demonstrate that periarteritis nodosa is one manifestation of anaphylactic hypersensitivity. Clinical and pathologic evidence supported by the experiments shows that widely different types of sensitizing antigens can cause periarteritis nodosa in man and suggest the advisability of attempting to discover and to eliminate the responsible antigen in each case so diagnosed. Acute diffuse glomerulonephritis occurred in a few animals in which a hypersensitive reaction developed to the foreign serum; this supports the view that some cases of glomerulonephritis in man may be due to hypersensitivity.

**Acute Respiratory Disease and Pneumonia.**—Iverson reports the occurrence of an epidemic of primary atypical pneumonia of unknown cause in a boys' camp in Maine between July 22 and Aug. 14, 1942. At the same time numerous cases of respiratory disease varying from a mild common cold without fever to the severe picture of atypical pneumonia, except that no pulmonary involvement was demonstrated, were observed. A common etiologic agent was believed to be operative in most

of both types of cases. Councilors estimated that 60 to 80 boys of the 100 of the camp group suffered with cough during eight weeks; 35 with respiratory disease and fever were confined to bed. In these 35 moist rales over the pulmonary fields developed in 15 and 7 showed definite x-ray evidence of atypical pneumonia. The 28 with respiratory disease with fever but without x-ray evidence of pneumonia were ill for as long as seventeen days. Although to a lesser degree, these patients had about the same symptoms as those with pneumonia: severe paroxysms of coughing, in several nausea, vomiting, dizziness and epistaxis, moist rales in 8, sibilant rales in 4, conjunctivitis and tympanic congestion in a few and easier breathing than in the pneumonia group. During the camp period of eight weeks 8 boys became ill with chickenpox. The epidemic had a higher rate of incidence among the younger boys and in the dormitory rooms of the younger boys. It cannot be determined whether age or housing played the greater part. Presumably the disease was spread by contact. There was no evidence that birds or insects were agents of transmission. A long incubation period (six to thirty days) for the disease is suggested by the close contact of 12 boys for four days; 6 of them became ill.

## California and Western Medicine, San Francisco

**58**:1-54 (Jan.) 1943

Care and Management of the Volunteer Blood Donor. J. R. Upton, San Francisco.—p. 7.
Bronchoscopy: Its Role in Treatment of Asthma. J. L. Gompertz, Oakland.—p. 10.
Leg Lengthening Operation: Its Present Status. Alvia Brockway, Los Angeles.—p. 11.
Classification of Myelitis. W. F. Schaller, San Fancisco.—p. 13.
Selective Anesthesia. C. J. Betlach, Santa Barbara.—p. 16.

**58**:55-102 (Feb.) 1943

Sulfathiazole Reactions in Toxic and Nontoxic Individuals. R. C. Green, M. L. Steckel and J. M. Michener, Camp Haan.—p. 62.
Pneumomediastinum and Subcutaneous Emphysema: Following Thoracocervical Trauma: Recovery Following Conservative Treatment. B. Friedman and S. D. King, Fort Ord.—p. 66.
Fertility Studies in Barren Marriages. L. Michelson, San Francisco.—p. 69.
Carcinoma of Prostate: Recent Advances in Its Treatment. R. T. Bergman, Los Angeles.—p. 71.
Hypothyroidism—Latent Symptoms. W. A. Reilly, San Francisco.—p. 73.

## Canadian Medical Association Journal, Montreal

**48**:191-290 (March) 1943

Medical Report on St. John's Conflagration. A. W. Farmer, D. R. Webster, F. M. Woolhouse and R. I. Harris, Toronto, and Adeline Evans, Watford, Ont.—p. 191.
Early Recognition and Treatment of Shock. Subcommittee on Shock and Blood Substitutes of Associate Committee on Medical Research, National Research Council of Canada.—p. 196.
Significance of Intracranial Injury of Newborn with Accompanying Hemorrhage. F. G. McGuinness, Winnipeg, Man.—p. 206.
Problem of Sailor's Skin. R. Forsey.—p. 212.
*Observations on Body Heat in Engine Room. A. L. Chambers.—p. 214.
Further Results in Ureterosigmoid Anastomosis and Cystectomy. R. A. McComb and R. Pearse, Toronto.—p. 215.
Meningitis in Childhood. N. Silverthorne, Toronto.—p. 218.
Intravenous Anesthesia. W. S. Johns, Calgary, Alta.—p. 222.
*Incidence of Enterobiasis in Toronto. E. Kuitunen-Ekbaum, Toronto.—p. 229.
Estrogen Therapy in Testicular Hypofunction. S. Gold, Montreal.—p. 231.
Spontaneous Mediastinal Emphysema. D. S. Munroe and G. A. C. Webb, Toronto.—p. 232.

**Observations on Body Heat in Engine Room.**—To determine how rapidly a man's temperature increases in a saturated atmosphere and whether heat, humidity and poor ventilation have a deleterious effect on the affected ratings, Chambers recorded the oral temperature and pulse rate of ratings employed in the hotter parts of a ship. The ship was in the vicinity of Trinidad and in Port of Spain when the readings were obtained. The only unusual occurrence the readings revealed was a slight increase in pulse rate. The heat and humidity with the present system of ventilation seemed to have no harmful effect on the robust and physically fit stoker or galley worker. The ventilation could be improved.

**Incidence of Enterobiasis in Toronto.**—Of 300 children and 56 adults examined for enterobiasis, Kuitunen-Ekbaum found, respectively, 60 and 52 per cent to be infected. The highest incidence was among the age groups 6 to 11 years and the incidence was higher in girls than in boys. In the youngest age group most of the infected children were 2 years of age. Only 1 child less than 1 year of age had the parasites. Of 34 families examined comprising 139 persons, all or most of the members of 29 families were infected. In 26 of the families every child was infected.

## Cancer Research, Baltimore

**3**:145-216 (March) 1943

Metabolism of 3,4-Benzpyrene in Mice and Rats: I. Isolation of Hydroxy and Quinone Derivative and Consideration of Their Biologic Significance. I. Berenblum and R. Schoental, Oxford, England.—p. 145.
Id.: II. Identification of the Isolated Products as 8-Hydroxy-3,-4-Benzpyrene and 3,4-Benzpyrene-5,8-Quinone. I. Berenblum, D. Crowfoot, E. R. Holiday and R. Schoental, Oxford, England.—p. 151.
Glycerophosphatases of Rat Liver Cancer Produced by Feeding *p*-Dimethylaminoazobenzene. Helen Quincy Woodard, New York.—p. 159.
Metabolism of Yale Carcinoma 1. M. Belkin, Charleston, S. C., and K. G. Stern, New York.—p. 164.
Effect of 2,7-Dihydroxynaphthalene on Tumor Incidence and Growth of Mammary Gland in Mice of Line A Albino and CsH Strains. E. Elizabeth Jones, Wellesley, Mass.—p. 168.
Effect of Sodium Pentobarbital, Paradichlorbenzene, Amyl Acetate and Sovasol on Induced Resistance to Transplanted Leukemia of Rat. J. B. Murphy and E. Sturm, New York.—p. 173.
Skin Tunnel: Device for Keeping Substances in Contact with Skin. A. Plaut and Alice C. Kohn-Speyer, New York.—p. 176.
Metabolic Studies in Patients with Cancer of Gastrointestinal Tract: XVII. Conjugation of Phenols. J. C. Abels, G. T. Pack and C. P. Rhoads, New York.—p. 177.
Estrogen and 17-Ketosteroid Excretion in Patients with Breast Carcinoma. H. C. Taylor Jr., Flora E. Mecke and G. H. Twombly, New York.—p. 180.
Further Studies of Specific Precipitin Antiserums for Protein of Cancer Tissue: I. L. S. Mann and W. H. Welker, Chicago.—p. 193.
Id.: II. Application of In Vivo Absorption. L. S. Mann and W. H. Welker, Chicago.—p. 196.
Heterotransplantation of Human Pseudomyxoma Peritonei into Mice and Rats. B. Zondek, F. Mandl, F. Sulman, A. Brezezinski and Hertha Gabriele Tietz, Jerusalem, Palestine.—p. 198.

## Journal of the Mount Sinai Hospital, New York

**9**:891-936 (Jan.-Feb.) 1943

Newer Concepts of Infection and Immunity and Chemistry's Part in Their Development: I. M. Heidelberger, New York.—p. 893.
Id.: II. M. Heidelberger, New York.—p. 897.
Serum Calcium: Clinical and Biochemical Considerations. H. L. Jaffe and A. Bodansky, New York.—p. 901.

## Journal of Nutrition, Philadelphia

**25**:103-206 (Feb.) 1943. **Partial Index**

Goitrogenic Action of Calcium and Vitamin D. G. R. Sharpless, Marie Sabol, E. Kathleen Anthony and Helen L. Argetsinger, Detroit.—p. 119.
Role Played by Gastrointestinal Tract in Absorption and Excretion of Riboflavin. H. Selye, Montreal, Canada.—p. 137.
*Retention of Vitamins in Meat During Cooking. J. M. McIntire, B. S. Schweigert, L. M. Henderson and C. A. Elvehjem, Madison, Wis.—p. 143.
Experiments on Significance of Liberal Levels of Intake of Riboflavin. L. N. Ellis, Garden City, N. Y.; Anna Zmachinsky and H. C. Sherman, New York.—p. 153.
Renal Threshold for Ascorbic Acid in 12 Normal Adults, with Note on State of Tissue Reserves of Subjects on Intake of Ascorbic Acid Approximating Suggested Daily Allowance. Jane Sanford Lewis, Clara A. Storvick and Hazel M. Hauck, with cooperation of Isabel Patterson, Shizuko Higano and Betty Hawthorne.—p. 185.
Fat Metabolism and Goiter. R. E. Remington and P. L. Harris, Charleston, S. C.—p. 203.

**Retention of Vitamins in Meat During Cooking.**—McIntire and his co-workers report on the retention of thiamine, riboflavin and nicotinic acid in samples of pork, ham and loin cooked under standard conditions. The average retention of thiamine in the meat alone is 70 per cent after roasting and broiling and 50 per cent after braising; for nicotinic acid it is 85 per cent after roasting and broiling and 65 per cent after braising, and for riboflavin it is 85 per cent after any of the cooking methods. The total retention in the meat and the drippings is about the same for all the methods, an average of 70 per cent for thiamine and at least 90 per cent for riboflavin and nicotinic acid. An appreciable amount of each of the vitamins is found in the drippings, particularly in drippings from braised loin cuts. There is a wide variation in the thiamine and riboflavin content of different pork carcasses; nicotinic acid is more constant.

## Journal of Urology, Baltimore

**49**:203-340 (Feb.) 1943

*Sterile Pyuria, with Special Reference to True Infective Abacterial Pyuria. T. Moore, Manchester, England.—p. 203.
Clinical Approach to Cortical Renal Neoplasms. R. M. Le Comte, Washington, D. C.—p. 224.
Pyeloureteral Dilatation in Successive Pregnancies. G. van Wagenen and R. H. Jenkins, New Haven, Conn.—p. 228.
*Incidence of Pyelonephritis in Successive Pregnancies. J. T. MacLean and C. L. Deming, New Haven, Conn.—p. 236.
Bridging a Gap in the Ureter by Means of Free Fascial Transplant Over Straight Vitallium Tube: Experimental Study. J. W. Lord Jr., P. L. Stefko and A. R. Stevens, New York.—p. 249.
Influence of Demerol on Contractions of Ureter. D. R. Climenko and H. Berg, Albany, N. Y.—p. 255.
Exstrophy of Bladder Complicated by Adenocarcinoma of Bladder and Renal Calculi: Report of Case and Review of Literature. B. S. Abeshouse, Baltimore.—p. 259.
Toxic Renal Reactions Following Use of Sulfadiazine. H. S. Jeck and L. Orkin, New York.—p. 290.
*Sulfadiazine Reactions: Their Frequency and Treatment in Urologic Cases. R. W. Satterthwaite, Baltimore.—p. 302.
X-Ray Studies of Kidney and Urethra Following Sulfa Drug Therapy. R. L. Smith and W. N. Baker, Denver.—p. 316.
Factors Influencing Formation of Sulfonamide Urinary Concretions. R. W. Barnes and G. K. Kawaichi, Los Angeles.—p. 324.
Hydrogen Ion Concentration and Solubility of Sulfonamides in Urine: Relation to Renal Precipitation. O. J. Jensen Jr. and C. L. Fox Jr., New York.—p. 334.

**Sterile Pyuria.**—Moore studied the records of the clinical laboratory at the Manchester Royal Infirmary for a period of thirty months. He found that 78 patients had urines which contained pus cells but proved sterile on culture. In addition, 2 from another hospital have been added as they are examples of true infective abacterial pyuria. The cases are divided on an etiologic basis into three groups: noninfective, infective, with organisms demonstrable on direct microscopic examination of the centrifuged urinary deposit with the urine sterile on culture, and infective cases in which no organisms can be demonstrated by any method. The recurring trauma of a calculus in the urinary tract would be expected to give rise to sterile pyuria. An inflammatory focus outside but adjacent to the urinary tract did not give rise to any instance of sterile pyuria. In such cases the inflammatory exudate at the periphery of the inflammatory lesion is due more to the toxins excreted by the causative bacteria than to the bacteria themselves. When the inflammation affects contiguous structures the exudate may be free from organisms. Such sterile pyuria may occur when an abscess is in contact with but outside the kidney, renal pelvis, ureter, bladder or urethra. In the infective group the organisms of the bacterial infection of the urinary tract, during the later stages, present in the urine have been so altered either by the tissue reaction or by treatment that they may fail to grow. There were 24 cases of urinary tuberculosis in the series. This is the most common cause of sterile pyuria, and it has become almost axiomatic that sterile pyuria indicates urinary tuberculosis. In all these cases the bacilli were demonstrable on microscopic examination of the urinary deposit and by special methods. In the 9 cases of the last group the infection of the urinary tract had been overcome, but the inflammatory cells had not, at the time of the examination, disappeared from the urine. Within a short time the pyuria in these cases disappeared. The excretion of organisms may be intermittent. Autosterilization was found only when the lesion was resolving. In a study of acute cholecystitis Gray has found that in cases of long standing the pus in the gallbladder is often sterile. In cases of carcinoma of the bladder, in the absence of bacterial infection, hematuria is usual. However, organisms are likely in the necrotic neoplasm and this may lead to inflammatory changes with resultant pyuria. In 2 such cases there was no infection but the pyuria was understandable. Neoplastic invasion often leads to some inflammatory tissue reaction and, if it is growing so rapidly that necrosis occurs, the dead tissue is probably a more potent inflammatory stimulus. In 5 patients with subacute prostatitis it was possible for inflammatory changes at the periphery of the gland and the base of the bladder to be due more to their toxins than to the bacteria themselves; therefore sterile pyuria may be expected sometimes. The most important and more common than is usually recognized type of sterile pyuria is true infective abacterial pyuria.

**Incidence of Pyelonephritis in Successive Pregnancies.**—The 68 cases of pyelonephritis associated with pregnancy, a portion of 1,000 cases of pyogenic infection of the urinary tract followed and treated in the Department of Urology of the New Haven Hospital during the last twenty years, were personally treated by MacLean and Deming, and for the larger group they acted solely as consultants without the privilege of directing the therapy. Among the 68 there were seventy-four infections: sixty-five infections developed during pregnancy and nine post partum. One third of the infections occurred in the fifth and sixth months of pregnancy and nearly two thirds in the first and second pregnancies. There were five complications: one unilateral double kidney and ureter, one bilateral double kidney and ureter, one renal calculus, one anterior poliomyelitis and one death. The colon type of bacillus was the most common infecting organism and staphylococci the next. The bacteriology of cultures agreed with that of stained smears in 72 per cent of the cases. Pyogenic infection of the urinary tract during pregnancy is not in the authors' opinion an indication by itself for abortion. There is no association between the month of pregnancy at which the infection occurs and the ability to reach term, provided conservative treatment is used; 85 per cent of the patients were carried to term or until the fetus became viable by conservative therapy, and of these 90 per cent were delivered of living infants. It is established that pyelitis practically never exists without pyelonephritis. A considerably reduced phenolsulfonphthalein test confirms pyelonephritis. The incidence of hypertension in the group was 27 per cent; this was no higher than that which occurs in any other group of cases of pyelonephritis not complicated by pregnancy. An acute infection of the upper part of the respiratory tract often immediately preceded the onset of the urinary infection. Dilatation of the ureter also was common. Mandelic acid and the sulfonamides were most effective in combating the urinary infection. The range of organisms for which they were effective was greater than that of any other single drug used. Therapy was given until the patient was either "cured" or delivered; only 25 per cent were "cured" at term, but within two weeks of delivery 90 per cent were asymptomatic and free from infection.

**Sulfadiazine Reactions in Urology.**—Among 500 consecutive patients in the urologic service (300 hospitalized and 200 outpatients) given sulfadiazine to combat infection, Satterthwaite encountered fifty-eight reactions to sulfadiazine. Thirty-two toxic reactions occurred among the hospitalized and twenty-six among the outpatients; all yielded promptly to treatment (withdrawal of the drug and the forcing of fluids) and there were no fatalities. The toxic reactions were usually multiple and consisted of conjunctivitis, arthritic pain, severe anorexia, itching, dizziness, severe disorientation, severe nausea, severe nausea and vomiting, headache, dermatitis, hematuria with or without urinary concentrations and renal colic, leukopenia and partial suppression of the urinary output. Leukopenia, the most severe reaction to sulfadiazine therapy, develops not earlier than the third day and usually in the second week of treatment. The use by outpatients of a printed set of precautions has reduced the incidence of toxic reactions.

## Kansas Medical Society Journal, Topeka

**44**:37-72 (Feb.) 1943

Fundamentals of Psychiatry: V. Personality-Environmental Struggle. W. C. Menninger, Topeka.—p. 37.
Bladder Ulcer. H. W. Davis, Plains.—p. 41.
Fecaliths and Gallstones as Cause of Intestinal Obstruction. A. E. Gardner, Wichita.—p. 41.

## Kentucky Medical Journal, Bowling Green

**41**:69-102 (March) 1943

Primary Carcinoma of Fallopian Tubes and Ovaries. D. Y. Keith, Louisville.—p. 74.
Pathology of Coronary Disease. E. S. Maxwell, Lexington.—p. 79.
Lesions of Tendons and Tendon Sheaths. C. Wood, Louisville.—p. 82.
Sulfonal Drugs in General Medical Practice. R. T. Routt, Sonora.—p. 85.
Medical Trends in the United States. E. F. Horine, Louisville.—p. 89.
Care of the Newborn. W. W. Nicholson, Louisville.—p. 94.

## Laryngoscope, St. Louis

**53**:75-148 (Feb.) 1943

Experimental Surgery of Frontal Sinus: Role of Ostium and Nasofrontal Duct in Postoperative Healing. T. E. Walsh, St. Louis.—p. 75.
Local Sulfonamide Therapy in Otolaryngology. A. C. Furstenberg, Ann Arbor, Mich.—p. 93.
Papilloma of Larynx: Report of 2 Unusual Cases. L. R. Boies, Minneapolis.—p. 101.
Osteophytes of Maxillary Sinus. L. W. Dean Jr. and W. H. Diehl, St. Louis.—p. 112.
Neurology in Otolaryngology. H. Brunner, Chicago.—p. 117.

## Maine Medical Association Journal, Portland

**34**:45-62 (March) 1943

Epidemic Meningitis: Cerebrospinal Fever; Spotted Fever. R. L. Mitchell, Augusta.—p. 45.
Meningococcic Meningitis: (Simplified Plan for Diagnosis and Treatment in the Home). R. Martin, Portland.—p. 49.
Eligibility of Patients for Various Cancer Services. M. Warren, Portland; F. B. Ames, Bangor, and H. R. Kobes, Augusta.—p. 51.

## Michigan State Medical Society Journal, Lansing

**42**:81-160 (Feb.) 1943

Newer Treatment of Common Skin Diseases. C. S. Wright, Philadelphia.—p. 105.
Regional Enterocolitis: Report of 31 Cases. L. B. Ashley, S. G. Meyers and L. Reynolds, Detroit.—p. 109.
Glomus Tumor or Glomangioma: Case Report. J. C. Scully, Menominee.—p. 118.
Evaluation of Rectal Examinations. H. C. Guess, Buffalo.—p. 121.

## Military Surgeon, Washington, D. C.

**92**:1-112 (Jan.) 1943

Some Contributions to Medicine and Surgery Which Have Helped to Make Possible the Present State of Medical Preparedness (Presidential Address). J. A. Mattison.—p. 4.
Relation of Early Care to Final Outcome of Major Face Wounds in War Surgery. V. P. Blair.—p. 12.
Our Opportunity for Preventive Dental Medicine. E. T. Fischer.—p. 17.
Considerations for Evaluation of Physical Disabilities. C. H. Bradford.—p. 25.
Standardizationn of Blood Grouping Serum. J. P. Crawford and L. D. Hertert.—p. 31.
Obstruction of Small Intestine from Primary Calculus. W. F. DeWitt, P. G. Morrissey Jr. and S. D. Failla.—p. 34.
Electrocardiographic Changes Involving ST Segment and T Wave. A. H. Clagett Jr.—p. 37.
Studies on Pathogenesis of Acute Hematogenous Osteomyelitis. D. B. Simpson.—p. 43.
Juvenile Glaucoma: Report of Case in a 19 Year Old Soldier. T. L. McKee.—p. 50.
*Biologic False Positive Tests for Syphilis Associated with Routine Army Immunizations. R. D. Arthur and J. M. Hale.—p. 53.
Report of Case of Oral Myiasis. R. B. Shira.—p. 57.
Treatment of 56 Meningococcus Carriers with Chemotherapy. P. S. Strong and J. M. Blumberg.—p. 59.
Use of Local Anesthesia in Treatment of Sprains (or Local Tissue Injury Without Open Wounds). I. Leinwand.—p. 60.
Severe Anaphylactic Reaction to Bee or Wasp Sting. S. Helm.—p. 64.
Clinical Abstracts of an Unusual Case of Skin Sensitivity to Metal Tags Worn by Troops in the Field. P. N. Unger.—p. 67.

**92**:113-232 (Feb.) 1943. **Partial Index**

An Appraisal of the Medical Department at War. J. C. Magee.—p. 113.
Basic Principles Involved in Plans and Arrangements of Our Naval Medical Service. R. T. McIntire.—p. 120.
Public Health Task in War. T. Parran.—p. 129.
Medical and Hospital Service Experience with Disabled Veterans of World War II. C. M. Griffith.—p. 135.
Medical and Epidemiologic Management of Selective Service Men Rejected for Military Service. C. R. Reynolds.—p. 140.
Wartime Problems of Selective Service. L. G. Rowntree.—p. 149.
Army Nurse Corps in Time of War. Julia O. Flikke.—p. 174.
Work of the Medical Field Service School. A. S. Dabney.—p. 178.
Medical Service in the Red Army. I. N. Zavalishin.—p. 189.
Perforated Peptic Ulcer in an Army General Hospital. D. T. Chamberlin and W. C. Wallace.—p. 193.
Need for Accuracy in Conducting Hearing Tests in the Military Service. S. Zwerling.—p. 202.

**Biologic False Positive Tests for Syphilis.**—According to Arthur and Hale, the Kahn test of 14 of 94 men who had been recently vaccinated against smallpox and who also had received typhoid vaccine and tetanus toxoid showed more or less temporary changes. The changes in 4 appeared in the baseline Kahn test done at the beginning of the experiment and 2 of the men even showed a positive Wassermann reaction. It is probable that these reactions were influenced by the injections received previously. All the serologic changes were temporary and faded out to normal negative reactions within six to seven weeks (one eight weeks) of the last injection. Tests at another laboratory also were negative. Physical examination of each man revealed no clinical evidence of syphilis. One man whose Kahn test was persistently negative was hospitalized for jaundice. Another man, who had changes in his baseline Kahn and Wassermann tests, was released from service because of physical disability. His serum had turned negative according to the Kahn test, but no final Wassermann test could be obtained. It appears that the army routine immunizations were responsible in 14.8 per cent of the cases for a temporary change in the normal negative Kahn reaction. It is during this period that an unfortunate diagnosis of syphilis may be made.

## Minnesota Medicine, St. Paul

**26**:145-224 (Feb.) 1943

Tuberculosis of Eye. F. H. Haessler, Milwaukee.—p. 161.
Modern Methods of Control for Measles, Scarlet Fever and Diphtheria. A. L. Hoyne, Chicago.—p. 167.
Toxemias of Pregnancy. J. A. Haugen, Minneapolis.—p. 171.
Use of Sulfonamides in Pregnancy. M. B. Sinykin, Minneapolis.—p. 173.
Obstetrics in the Home. E. S. Palmerton, Albert Lea.—p. 176.
Management of Occipitoposterior Positions. W. C. Keettel, Madison, Wis.—p. 179.
Ectopia Cordis. H. J. Prendergast, St. Paul.—p. 182.
Embryology and Genetics in Ectopia Cordis Abdominalis. F. C. Schuldt, St. Paul.—p. 184.

## New England Journal of Medicine, Boston

**228**:177-210 (Feb. 11) 1943

Government's Obligation in Industrial Health. W. F. Draper, Washington, D. C.—p. 177.
Diagnosis of Sprue in Nontropical Areas. F. J. Ingelfinger, Boston.—p. 180.
*Treatment of Angina Pectoris with Testosterone Propionate: Further Observations. M. A. Lesser, Boston.—p. 185.
Hematology (concluded). W. Dameshek, Boston.—p. 188.

**Treatment of Angina Pectoris with Testosterone Propionate.**—Lesser reports successful results with testosterone propionate in the treatment of 46 patients with angina pectoris. Four patients of the group were studied by means of exercise tolerance tests before and during the course of therapy to obtain quantitative measurements of their improvement. Each patient exercised until an attack of angina pectoris was precipitated. The amount of work done before the development of an anginal attack was increased under testosterone therapy, and the severity of attacks, as measured by the duration of the pain, was correspondingly diminished. Subjective improvement was reported before quantitative changes could be demonstrated. Testosterone propionate does not give immediate relief from an anginal attack, as does glyceryl trinitrate. Further, improvement as to time and degree varies with the individual patient. Some patients experienced improvement after the second or third injection of testosterone propionate, others not until the eighth, ninth or even tenth injection, and still others required as many as fifteen to twenty-five injections over a period of months before therapy could be discontinued. An average of twenty-eight days elapsed before quantitative improvement was observed, and forty-three days elapsed before this improvement became decided. Not enough time has as yet elapsed to determine the permanence of the beneficial effects of testosterone propionate therapy. In a previous study this varied with the individual patient: two to eighteen months. Patients who returned for further treatment because of a recurrence of pain stated that their attacks were less severe than originally; also fewer injections were required to control them.

**228**:211-240 (Feb. 18) 1943

*Vascular and Neurologic Lesions in Survivors of Shipwreck: I. Immersion Foot Syndrome Following Exposure to Cold. J. C. White.—p. 211.
Fiedler's Myocarditis: Report of Case. H. T. Engelhardt and F. E. Bruno, New Orleans.—p. 222.
Respiratory Failure in Acute Poliomyelitis. C. Wesselhoeft, Boston.—p. 225.

**Vascular and Neurologic Lesions in Survivors of Shipwreck.**—White has seen in survivors of shipwrecks painful swelling of the lower extremities occur after exposure to the cold water of the North Atlantic in the winter as well as after

exposure to the warm water of the Gulf Stream in April and May. In the true immersion foot syndrome after relatively brief exposure of the lower extremities to cold water there exists actual thermal injury to the skin and subcutaneous tissue. This feature is not present after prolonged exposure in warm southern waters; the painful swelling of the dependent parts in these cases is caused by a systemic disturbance. The inflammatory hyperemia, which reaches its height on about the third day after exposure, gradually disappears in a fortnight. The complete cutaneous anesthesia below the ankles in mild cases clears rapidly on warming, but in the severe cases the anesthesia of the toes persists at the end of a fortnight and sensation over the remainder of the foot is reduced. The speed at which sensory recovery takes place over the dorsum of the foot is too rapid for nerve regeneration and is evidence that the majority of nerve fibers never actually degenerate. The fact that patients continue to suffer after their circulation has become normal suggests that the pain is neuritic, especially in the late stages. During the acute phase this may not be the entire reason. Rescued victims state that they are comfortable when the temperature of their feet is kept below 80 F. The probable disparity between the supply of blood to the tissues and the demand for oxygen on the part of the tissue cells constitute strong arguments for therapeutic cooling of hyperemic painful feet during the early stage of the postimmersion reaction. The common denominator in all conditions that follows thermal insults is injury to the blood vessels and nerves. For prevention all ship's officers and seamen should be acquainted with the dangers of exposure to cold air and cold or even warm water. Much can be accomplished by emptying boots periodically and putting on another pair of socks, even previously wet socks that have been wrung out and partially dried. Frostbite of the hands and feet may be prevented by greasing them. Movement of the cold, benumbed and dependent extremities, even temporary elevation, and avoidance of constricting pressure on the legs from clothing or boat gear are helpful preventive factors. The immediate local treatment is the same whether a person has suffered actual freezing or the less severe chilling of immersion foot. The extremity should be exposed, kept cool, elevated slightly above the level of the heart and cleaned surgically. The rationale of treatment is to reduce tissue metabolism. For the most intense stage of hot, congested feet and when the neuritic pains are severe, fanning or a cool atmosphere are not sufficient and ice packs are required. After the intense hyperemia has subsided exposure of the legs to room air or at most to the breeze from an electric fan assures comfort. At night the neuritic pains may increase and the reapplication of ice packs may be necessary. Buerger's exercises prior to getting the patients out of bed are advocated. A diet high in protein and vitamin B is often helpful. Crushing the peripheral nerves through small incisions above the ankle for the relief of intractable pain in severe cases of neuritic pain might be of value. This incapacitates the subject for duty for three months. The author fails to see how blocking the sympathetic outflow to the lower extremities by paravertebral injections of procaine hydrochloride and by lumbar sympathectomy in the acute stage can result in any possible improvement. Absence of sweating proves that the terminal vasoconstrictor fibers are already interrupted. Lumbar sympathectomy is likely to be of value only in the late stage when the circulation remains insufficient. The neuritic pain, which appears with partial recovery of the nerves, continues until nerve function is restored.

### 228:241-270 (Feb. 25) 1943

*Vascular and Neurologic Lesions in Survivors of Shipwreck: II. Painful Swollen Feet Secondary to Prolonged Dehydration and Malnutrition. J. C. White, Boston.—p. 241.
Clinical Biotin Deficiency. R. H. Williams, Boston.—p. 247.
Endoscopy. E. B. Benedict, Boston.—p. 253.

**Survivors of Shipwreck.**—White discusses the painful swelling of the feet of the crews of two lifeboats adrift for long periods in the Gulf Stream. There were fundamental clinical and etiologic differences from the "immersion foot" syndrome which develops in survivors of vessels lost in waters of the North Atlantic. Edema of the feet due to prolonged dependency and immobility was present in both groups. In the case of survivors torpedoed in the North Atlantic, additional swelling and neuritic pain were caused by direct thermal injury to the skin, cutaneous capillaries and nerves by immersion in cold water. Immersion in warm water by itself cannot account for either the edema or the pain. Therefore this syndrome should not be classified as immersion foot, as direct thermal injury can be excluded. Hypoproteinemia from starvation was an additional cause of swelling in these survivors. Such edema is not generally considered to be painful. It is postulated, but not proved, that the stomatitis, sensory disturbances in the hands and feet and plantar tenderness that developed in these patients were caused by a deficiency of the antineuritic factor and other components in the vitamin B complex. Such a deficiency may occur at a greatly accelerated rate in the rapid tissue oxidation reactions that take place in men doing hard physical work in a hot climate on an extremely inadequate intake of fluid. An added deficiency in vitamin K was suspected in 3 of the men in whom the prothrombin times were determined. Loss of blood in the stools was common. The possibility that a deficiency of vitamins B and K may develop as a complication of shipwreck in as brief a period as two and a half weeks has not been suggested heretofore.

## Rocky Mountain Medical Journal, Denver

### 40:73-144 (Feb.) 1943

Injuries to the Chest. C. F. Hegner, Denver.—p. 90.
*Congenital Cystic Disease of Lung: Report of Four Cases Treated Surgically. W. R. Rumel, Salt Lake City.—p. 95.
Gastrointestinal Complaints Based on Structural Abnormalities. T. C. Bauerlein, Salt Lake City.—p. 103.
Study of Maternal and Infant Deaths and Stillbirths in Wyoming. Margaret H. Jones, Cheyenne, Wyo.—p. 106.

**Congenital Cystic Disease of Lung.**—In view of the fact that congenital cystic disease of the lung is not common and that its surgical treatment is relatively new, Rumel cites 4 cases in which such intervention was successful. The pathologic and clinical picture in each instance was entirely different and therefore the surgical procedure varied: the unilocular cyst of 1 patient was incised, in 2 complete pneumonectomy was necessary and in 1 intrapleural poudrage was carried out. All the patients recovered and have been relieved of their symptoms.

## Virginia Medical Monthly, Richmond

### 70:121-172 (March) 1943

Care of the Tuberculous Rejected for the Armed Forces. C. H. Marcy, Pittsburgh.—p. 123.
Further Report on Use of Radium in Benign Conditions Causing Uterine Bleeding. W. L. Peple, Richmond.—p. 126.
Epidemiologic Studies in Syphilis. L. W. McIlhany and D. C. Smith, Charlottesville.—p. 130.
Leukorrhea: New Classification and New Approach to Treatment. W. Bickers, Richmond.—p. 135.
Report on Recovery of Tubercle Bacilli from Microscopically Negative Sputum Covering a Period of Eight Years. J. B. Nicholls and A. W. Bengtson, Catawba Sanatorium.—p. 141.
Radium: Historical Aspect. R. H. Hoge, Richmond.—p. 143.
American Pattern of Administrative Medicine. H. Emerson, New York.—p. 146.
Impressions of Diet and Disease in Korea. R. M. Wilson, Richmond.—p. 149.
Results of Kolmer Complement Fixation Tests on Spinal Fluids With and Without Addition of Egg Albumin to Complement. E. P. Foxhall, Richmond.—p. 153.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

### 51:35-88 (Feb.) 1943

Maternal Welfare: Indication of the Progress of Civilization: Presidential Address. T. F. Bell, Oakland, Calif.—p. 35.
Bleeding in Third Trimester of Pregnancy. E. N. Ewer, Oakland, Calif.—p. 46.
Influences of War on Obstetric Hospitalization. E. J. Krahulik and W. B. Thompson, Los Angeles.—p. 52.
Obstetrics as Affected by the Problem of War: Nursing Care. D. G. Tollefson, Los Angeles.—p. 56.
Obstetrics as Affected by Problems of War, with Particular Reference to Office Procedure. H. A. Stephenson, San Francisco.—p. 60.
Maintenance of Standards of Maternity Nursing Service in Public Health Field During the Present Emergency. Hope Newell and Margaret Reid, New York.—p. 62.
How the Small Hospital Can Extend Its Service to Community Through a Home Maternity Nursing Service. Elizabeth Burnett, Detroit.—p. 69.
Pancreatic Disease: Report of 4 Cases. R. E. McKechnie 2d, Vancouver, B. C., Canada.—p. 74.
Shock. W. L. Pedlow, Vancouver, B. C., Canada.—p. 81.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

**1**:179-208 (Feb. 13) 1943

*Lung Tumors in Mice and Man. J. A. Campbell.—p. 179.
War Neuroses: Nature and Significance. W. R. D. Fairbairn.—p. 183.
Abortus Fever. D. G. Leys.—p. 187.
Foot and Mouth Disease in Man. H. Długosz.—p. 189.
Pregnancy and Labor in Case of Congenital Coarctation of Aorta. C. W. Walker.—p. 190.

**Pulmonary Tumors in Mice and Man.**—Campbell has exposed mice once an hour for six hours five days a week for a year to a moderate cloud of the various substances (coal gas and tar, tobacco, metal, dust, silica, chromate and pitchblende) that apparently increase man's susceptibility to pulmonary cancer. Of the many substances tested, the statistical evidence in favor of the particular dust increasing the incidence of pulmonary tumors is highly significant for tarred road dust, a similar dust with carbon monoxide and also for a dust mixture containing equal parts of silica, iron oxide, alumina and calcium carbonate. The increase in incidence of pulmonary tumors in the experimental mice also was definitely significant with iron oxide, Czechoslovakian pitchblende dust containing a small quantity of radium and arsenic, tarred road dust from which the tar had been removed by benzene and tarred road dust. Experiments in which the increase in incidence was on the borderline of significance include a diluted "nickel" dust mixture, a bituminous coal dust and Czechoslovakian pitchblende dust containing no arsenic and practically no radium. Experiments in which the increase might have been due to chance included those with exhaust soot, steel grindings and silica and iron. No material difference in incidence was observed with an anthracite coal dust and coal soot from a chimney. This increase in incidence in mice by certain dusts directs that care should be taken to reduce the exposure of man to these dusts. Dusts produce a hypertrophy of lymph tissue in the lungs and in the tracheobronchial lymph nodes. There appears to be no fundamental reason why the results obtained in the experiments in mice should not apply to man.

**1**:209-242 (Feb. 20) 1943

Hemoglobinometry and Use of Hematocrit: Report to Traumatic Shock Committee of Medical Research Council.—p. 209.
Cesarean Section in Dystocia. L. G. Higgins.—p. 212.
Social Aspects of Allergy. E. M. Fraenkel.—p. 216.
Meningeal Reaction in Case of Glandular Fever. J. Shafar and J. C. R. Weir.—p. 218.
Radiographic Posteromedial Border of Lung or Linear Thoracic Paraspinal Shadow. J. F. Brailsford.—p. 219.

**1**:243-276 (Feb. 27) 1943. **Partial Index**

*Vitamins and Physical Fitness. A. A. Harper, I. F. S. Mackay, H. S. Raper and G. L. Camm.—p. 243.
Effects of Vitamins on Experimental Hyperthyroidism. V. Korenchevsky, K. Hall and B. Clapham.—p. 245.
*Use of Amphetamine Sulfate in Facilitating Electrically Induced Convulsions. K. C. Bailey.—p. 250.
Acute Disseminated Lupus Erythematosus: Recovery with Sulfanilamide. J. E. G. Pearson.—p. 253.

**Vitamins and Physical Fitness.**—Harper and his associates investigated whether the fitness of university students has diminished since the beginning of the war as the result of a deficiency in the average student's diet. The effects of adding vitamin supplements to the diet of one group were studied. Certain anthropometric data, physical efficiency tests and the incidence of minor ailments were used as a basis of comparison with a control group. The experiment was performed on 69 cadets over a period of twenty-one weeks (April 18 to Sept. 11, 1942). The authors found that the cadets receiving vitamin supplements were less susceptible to minor respiratory and gastrointestinal complaints than those receiving control tablets which contained no vitamins. The group receiving vitamins showed a greater increase in resting vital capacity and in breathholding and endurance times, and had a faster resting pulse rate than the control group.

**Amphetamine Sulfate and Electrically Induced Convulsions.**—Bailey raises the question of the cause of the heightened threshold in certain types of cases. Investigation showed that the threshold increased with age. Depression is more commonly found in older age groups. Two possibilities exist: (*a*) that certain forms of depression raised the threshold per se or (*b*) that age alone has this result. It is impossible to say definitely which factor operates the more strongly. Amphetamine sulfate, being a known cortical stimulant, was utilized in an attempt to lower the electrical convulsion threshold; it was effective, and smaller strengths of electricity could be used. The author thinks that it exerts its effect centrally rather than by peripheral changes, such as the heightened blood pressure. The possibility of the achievement of the central action by a process of "substrate competition," as suggested by Gaddum in the case of ephedrine, was advanced. In two cases there was some postconvulsion excitement. This was never very great and may not have been due to the drug, since such excitement has been present after the convulsion when the drug was not employed. No other undesirable effects were observed from the use of the drug; even the patient with a blood pressure of 210/120 appeared to suffer no harm from the doses given.

### Journal of Mental Science, London

**89**:1-160 (Jan.) 1943. **Partial Index**

Study on Symptomatology and Differential Diagnosis of Alzheimer's Disease and Pick's Disease. E. Stengel.—p. 1.
Affect in Schizophrenic Reaction Types. R. T. Collins.—p. 21.
Torulosis of Central Nervous System. D. Blair.—p. 42.
Conscientious Objectors with Psychiatric States. H. Stalker.—p. 52.
Shipley-Hartford Retreat Scale for Measuring Intellectual Impairment: Preliminary Communication. G. W. T. H. Fleming.—p. 64.
Spinal Anesthesia in Electrical Convulsive Therapy. H. J. Shorvon and L. M. Shorvon.—p. 69.
Experiences in Treatment of Depressive States by Electrically Induced Convulsions. O. W. S. Fitzgerald.—p. 73.
Some Complications Arising During Electrical Convulsive Therapy. E. Samuel.—p. 81.
Suicidal Head Injuries. E. Guttmann.—p. 85.
Measuring Abnormal Pattern on Revised Stanford-Binet Scale (Form L). C. R. Myers and Elizabeth V. Gifford.—p. 92.

### Journal of Pathology and Bacteriology, Edinburgh

**55**:1-136 (Jan.) 1943. **Partial Index**

Acute Paralytic Myohemoglobinuria in Man. E. G. L. Bywaters and J. H. Dible.—p. 7.
Renal Lesions in Case of Excessive Vomiting. N. G. B. McLetchie.—p. 17.
Occurrence of Siderocytes in Adult Human Blood. I. Doniach, H. Grüneberg and J. E. G. Pearson.—p. 23.
*Atherosclerosis of Main Renal Arteries in Essential Hypertension. G. O. Richardson.—p. 33.
*Histologic Reactions to Oils and Sulfonamide Preparations. F. Hawking.—p. 41.
Improved Unheated Blood Tellurite Medium for Diagnosis of Corynebacterium Diphtheriae. K. I. Johnstone and K. Zinnemann.—p. 53.
Involution Forms of Genus Vibrio Produced by Glycine. J. Gordon and M. Gordon.—p. 63.
Failure of Aluminum to Prevent Experimental Silicosis. T. Belt and E. J. King.—p. 69.
Hodgkin's Disease of Breast. S. Wray.—p. 75.
Experiments with Pneumotropic Strain of Lymphogranuloma Venereum Virus. M. van den Ende and Dora Lush.—p. 81.
Chyladenectasis with Steatorrhea. Dorothy M. Vaux.—p. 93.

**Renal Atherosclerosis and Hypertension.**—Richardson attempted to determine the incidence of lesions which might cause narrowing of the main renal arteries and their relation to essential hypertension in 32 consecutive necropsies on patients with essential hypertension and 113 without hypertension. In 25 of the 32 there was apparent stenosis of one or both main renal arteries by atherosclerotic plaques. In 22 of them the plaques were confined to a short segment of each artery near the aorta, in 2 the plaque was confined to one renal artery immediately proximal to the bifurcation and one renal artery showed no narrowing in the main trunk but the inferior branch of the primary division was definitely stenotic. In 8 the plaques were associated with a generalized atherosclerosis, in 12 an atheroma was limited to the aorta and in 5 no nodular atheroma was discovered. In the remaining 7 of the 32 there were no sclerosing lesions of the main renal arteries. In the 8 with unilateral stenosis, microscopic examination failed to show any difference between the "ischemic" and the "nonischemic" kidney. Among them there were 3 with malignant hypertension; afferent arteriolar necrosis occurred with equal frequency in the two kidneys. In 105 of the 113 without a history of hypertension the main renal arteries exhibited no lesions and in 8 athero-

sclerotic plaques were present; in 6 they were unilateral. The degree of occlusion was comparable to that seen in essential hypertension in only 3. Accessory renal arteries were present in 6. It is suggested that atheromatous plaques may be capable of producing renal ischemia and consequent hypertension analogous to experimental hypertension.

**Histologic Reactions to Oils and Sulfonamides.**—According to the experimental evidence presented by Hawking, application of oil to a wound is not recommended unless the oil will not become embedded in the tissues. This can be assured only by incorporating the oil in a packing or layer of gauze which is later removed *en masse*. Oils which become embedded eventually cause a reaction of the connective tissue. Any immediate advantage (nonsticking of dressings and improved drainage) to be gained from the presence of oil must be weighed against the danger of a delayed reaction. The least provocative of the oils tested was cottonseed oil, which excited only a thin covering of fibrous tissue without further overgrowth of the adjacent cells. Judging by the microscopic reaction provoked, the preparation of choice would be a microcrystalline suspension of a sulfonamide. A suspension of sulfathiazole is the best sulfonamide available because of its greater stability and greater bacteriostatic activity. The disadvantage of the sulfathiazole preparation lies in its present limited supply. Its best substitute would be the aqueous preparation of sulfanilamide L. For extensive wounds it would probably be advantageous to reduce the sulfanilamide concentration to 10 or 15 per cent to avoid toxic symptoms from too rapid absorption. Oily preparations of the sulfonamides suffer from the same defects as the oils which compose them.

## Archivos de Medicina Infantil, Havana

**12**:1-67 (Jan.-Feb.-March) 1943. **Partial Index**

*Heart Block in Children. R. Pérez de los Reyes, A. D. Alvarez, H. de la Torre and J. Costa.—p. 9.
Suppurated Meningitis in Infants. G. García Montes, B. Sánchez Santiago and R. Valés Diaz.—p. 36.

**Heart Block in Children.**—Pérez de los Reyes and his collaborators report a clinical and electrocardiographic study of 50 children between the ages of 1 and 12 years with heart block of various types, such as sinoauricular, simple partial and complete auriculoventricular and bundle branch block. The patients were observed in a group of 1,200 children examined in a municipal department of cardiology in Havana. Heart block of these types was congenital in 14 cases and of infectious, nutritional or toxic origin in the remaining ones. Rheumatic fever was the causal factor of auriculoventricular block in 26 of 29 children with this type of block. In 3 cases the block appeared after typhoid, suppurative pericarditis and streptococcic infection respectively. Avitaminosis, sickle cell anemia and ancylostomiasis were predominant causes in 5. Digitalis intoxication was the causal factor in 2. The Adams-Stokes syndrome was observed in 3 cases with complete auriculoventricular block either congenital or rheumatic. One of the patients died during a convulsive crisis. No instances of arborization block were observed. A prenatal diagnosis of partial or complete auriculoventricular block can be made when there is a diminution in the number of heart beats. The diagnosis is confirmed after birth. This possibility was established by American authors.

## Revista Médica de Rosario, Rosario

**32**:819-919 (Oct.) 1942. **Partial Index**

Recurrent Hyperthyroidism. W. T. Fotheringham.—p. 819.
New Therapeutic Resources in Therapy of Prostatic Epithelioma. J. S. Dotta and T. Delporte.—p. 835.
Auricular Flutter Caused by Intrabronchial Foreign Body. A. G. Vedove.—p. 846.
*Cardiac Anoxemia Caused by Inhalation of Gaseous Mixtures. M. Sloer.—p. 857.

**Cardiac Anoxemia.**—Sloer examined electrocardiograms of 30 persons, either normal or with heart disease, in the course of induced anoxemia. A mixture of 10 per cent oxygen and 90 per cent nitrogen was used. The electrocardiographic changes were as follows: There was a diminution of the T wave in the electrocardiograms of 4 out of 8 normal persons, in 8 out of 13 patients with moderate heart disease and in 7 out of 9 patients with subacute or grave heart disease. There was a deviation of the ST segment in 2 out of 8 normal persons, in 3 out of 13 patients with doubtful heart disease and in 6 out of 9 with heart disease. Acute anginal pain developed during the induced anoxemia in 3 patients with a history of anginal pains, in 1 patient with bundle branch block and in 1 with syphilitic aortitis. The pain was controlled by administration of pure oxygen. The electrocardiographic changes caused by induced anoxemia could be controlled by inhalation of pure oxygen one minute after the induced anoxemia. The degree of the electrocardiographic change in cases of doubtful or grave heart disease corresponded to the acuteness of the disease. However, cardiac anoxemia cannot be used as a test of coronary insufficiency because alterations of the same type, although to a different degree, are to be seen in the electrocardiograms of normal persons as well as of those with doubtful or grave heart disease. Electrocardiographic alterations in the course of induced anoxemia are caused by a myocardial reaction to metabolic substances accumulated in the structure, whereas anginal pain is caused by irritation of the nerves of the coronary vessels.

## Semana Médica, Buenos Aires

**49**:1509-1572 (Dec. 24) 1942. **Partial Index**

Physical Therapy of Poliomyelitis. A. M. Marque.—p. 1509.
Effort Syndrome During War. G. Bermann.—p. 1513.
*Trachoma: Its Prophylaxis in Argentina. J. A. Sená.—p. 1520.
*Symphysiotomy in Contraction of Inferior Plane of Pelvis. D. E. Nölting and C. Peña Méndez.—p. 1551.
Treatment of Secondary Meningitis. J. Opizzi and C. Crivellari.—p. 1554.

**Trachoma: Its Prophylaxis in Argentina.**—According to Sená, about 15 per cent of the population of the world have trachoma. No country in the world is entirely free from it. It is a disease of poverty, promiscuity, unhygienic living conditions and poor food. The diagnosis of trachoma is difficult. Numerous diagnostic aids have been suggested, such as the complement deviation test, eosinophilia, the phytotoxin test of Macht, the lysozyme titer in the lacrimal fluid, Abderhalden's reaction and the Weil-Felix reaction, but none of these have fulfilled the hopes placed in them. The diagnosis is chiefly clinical and is based on the presence of follicles in the tarsal conjunctiva, the presence of pannus, the appearance of cicatrices and palpebral and tarsal alterations such as entropion and trichiasis. The treatment is local as well as general. Measures which aim at improvement in the general health should not be neglected. In the incipient forms of trachoma in children mild eye washes of zinc or copper sulfate are used. The therapeutic armamentarium against the more severe forms includes copper sulfate, silver nitrate, chaulmoogra oil and mercuric cyanide. Physical methods include cauterization and diathermic coagulation. Mechanical methods such as massage, brushing and curettage aim at the rapid destruction of the trachomatous follicles. Biologic methods occasionally used are autoserotherapy and vaccine treatment. Cicatricial trachoma requires surgical treatment. Opinions are divided as to the efficacy of the sulfonamides. They are of great value in the complicated forms. The disease is most prevalent and practically endemic in the northern and subtropical parts of Argentina, where it is favored by climatic, social, sanitary and economic conditions. It is not autochthonous for these regions but was brought in by immigrants, chiefly from the Mediterranean countries. Trachoma of children is best combated in the schools. This has been done in recent years with the aid of visiting nurses. Ophthalmologic dispensaries should provide free treatment for adults. Since 1936 the National Department of Health has provided antitrachomatous drugs to the dispensaries and schools. Mobile medical ambulances would be helpful in bringing treatment to patients in the rural regions. Popular publications, illustrations and moving pictures are valuable in disseminating information regarding the prophylaxis of the disease.

**Symphysiotomy for Contracted Inferior Plane of Pelvis.**—Nölting and Peña Mendez show that pelves contracted in the median and inferior planes are most benefited by symphysiotomy. They describe 6 cases in which dystocia was the result of transverse narrowing in the inferior planes of the pelvis and in which symphysiotomy solved the problem.

# Book Notices

**Chemotherapy of Gonococcic Infections.** By Russell D. Herrold, B.S., M.D., Associate Professor of Surgery (Urology), College of Medicine, University of Illinois, Chicago. Cloth. Price, $3. Pp. 137. St. Louis: C. V. Mosby Company, 1943.

In this first edition of his monograph Herrold gives a timely presentation of the application of sulfonamide therapy to gonococcic infections. The advent of chemotherapy five years ago revolutionized the treatment of gonorrhea and removed it from the exclusive domain of the venereologist. This book now also has practical value to the internist, the general practitioner and the gynecologist as well as the urologist. The author suggests that if gonorrheal treatment is to remain in private practice physicians must become familiar with epidemiologic measures and cooperate with health authorities as is done in other infectious diseases.

The book is based on the author's experience in 800 cases treated with sulfathiazole and an additional thousand treated with azosulfamide, sulfanilamide, sulfacetamide, sulfapyridine, sulfadiazine, dimethyldisulfanilamide (Uliron), sulfanilyl sulfanilamide (Disulon) and sulfamethylthiazole. The author does not concern himself with the bacteriology, pathogenesis, pathology, endoscopic methods and obsolete or obsolescent antiseptics. He has stripped the management of gonococcic infections of all unnecessary accessories and has streamlined his treatment. Infections refractory to one sulfonamide were retreated with the same or a kindred drug or by fever therapy or older conventional methods. The scope of the book covers treatment of men, women and children.

Uliron, Disulon and sulfamethylthiazole were early withdrawn from clinical investigation because of their toxicity. And "at present there is no place for sulfanilamide in the treatment of gonococcic infections." Sulfapyridine has a higher incidence of toxic reactions, both general and within the urinary tract, than have sulfathiazole and sulfadiazine and therefore there is seldom any indication for its use. Sulfacetamide, though less toxic than the former drugs, is inferior to sulfathiazole and sulfadiazine. Herrold has had more experience with sulfathiazole than with sulfadiazine and at present recommends it more highly. The author discusses the relative values of five and ten day treatments. He feels that the maximum safe total dosage without a rest period is 20 to 25 Gm. Chemical prophylaxis is discussed. Sulfonamide resistant cases are subjected to fever therapy. The subclinical infective state "carrier" is discussed as one of the potential hazards. The author recommends a minimum period of three months' observation and repeated negative cultures as proof of cure. Chemotherapy has definitely decreased complications. The problem of diagnosis and determination of cure is exceedingly more difficult in the female because symptomless infections are more frequent. Epidemiology, prophylaxis, culture mediums and their method of transportation are considered. Sixty-two case histories are excellently presented. This book should be read by every one treating gonorrhea.

**Diseases of the Liver, Gallbladder and Bile Ducts.** By S. S. Lichtman, M.D., F.A.C.P., Assistant in Post-Graduate Medical Instruction, University Extension, Columbia University, New York. Cloth. Price, $11. Pp. 906, with 122 illustrations. Philadelphia: Lea & Febiger, 1942.

The author has done a good job of compilation of physiologic and clinical data. The book is especially valuable for reference because of the extensive bibliography for every chapter. One might take exception to several controversial statements on page 73. The lactic acid cycle is stressed as important, while it comes into play only in certain phases of severe exercise, when lactic acid is formed by muscle as the result of relative anoxemia. On the same page the author makes the statement that glycogen is converted by amylase. There is no amylase present in the normal liver cells. His discussion of liver function is well done. However, in future editions he should correct the statement "Normally the plasma cholesterol is 45 to 75 per cent esterified." The work of Sperry and Schonheimer has shown normal esterification to be between 68 and 72 per cent. For the most part the physician will find the book useful for ready reference. The best sections are the histology, pathology and liver function tests, and then the clinical sections.

**The Sexual Cycle in Women: The Relation Between Ovarian Function and Psychodynamic Processes.** By Therese Benedek, M.D., and Boris B. Rubenstein, M.D., Ph.D. Psychosomatic Medicine Monographs Volume III, Nos. I and II. Published with the sponsorship of the Committee on Problems of Neurotic Behavior, Division of Anthropology and Psychology, National Research Council, Washington, D. C. Paper. Price, $3.50. Pp. 307. Washington, D. C.: National Research Council, 1942.

Observations in psychosomatic medicine formerly consisted of case reports in which an effort was made to show a relationship between symptom formation and life situation. In recent years the attempt has been made to investigate the possibility of a specific relationship between the illness and the personality of the patient. In this category are studies which attempt to define the psychologic characteristics of patients who are apt to fall ill with such medical disorders as asthma, peptic ulcer and hypertension.

The present monograph is one of a series designed to meet the needs in this field of publication for experimental data resulting from longer studies than can be published in the *Journal of Psychosomatic Medicine*. A research project of the Institute for Psychoanalysis, Chicago, the investigation represents a new and important departure in psychosomatic medicine. It combines histologic and psychologic methods in an effort to see whether a correlation exists between endocrine function and psychodynamic processes. The investigators, working independently, studied the vaginal smear and basal body temperature and made psychoanalytic observations of the emotional life on fifteen women of childbearing age. The findings were then compared. One hundred and fifty-two menstrual cycles were observed, embracing 2,261 days of observation.

As a result of the investigation the authors find that the sexual cycle is a psychosomatic unit. Psychologic material dominated by heterosexual interest (centrifugal psychodynamic tendencies) are related to estrogen production, while the psychologic material corresponding to the progesterone phase of the cycle shows passive and receptive features (centripetal psychodynamic tendencies). Desire for impregnation, the tendency to care for a child and the various reactions to these tendencies are reflected in the psychologic material. The pregnancy wish is one of the most characteristic psychodynamic expressions of progesterone function. Correct predictions of gonad hormone production, based on psychoanalytic observations, were made in 2,128 of the 2,261 days of observation. Adequate tables present the correlation.

A chapter is devoted to a critical evaluation of both methods, the vaginal smear technic and psychoanalysis, as instruments of biologic research. The authors feel that the vaginal smear, basal body temperature technic affords a method for day by day investigation of the gonadal cycle and that psychoanalysis permits investigation of the day by day fluctuations in psychosexual tension. They demonstrate the exactness with which the psychic apparatus reacts to changes of gonad hormone production. In fact, the psychologic changes appear to precede the vaginal smear changes; in other words, the psychic apparatus reacts first and the histologic changes of the vaginal mucosa develop later. Whether the patient whose sexual inhibition disappears as a result of psychologic treatment will produce more gonad hormones than previously cannot be answered at present. This as well as the investigation of additional symptoms are problems that must remain for this new psychosomatic technic. Concerning the even more intriguing problem of whether this kind of an investigation can be used for the purpose of combining endocrine therapy with psychoanalysis, the authors properly caution as follows:

> We studied only how the individual reacts to her own hormones. It is not improbable that microscopic study of psychodynamic reactions to hormones might clarify indications for hormone therapy. But it is evident that the psychosomatic reactions to hormones are so complex that we should caution against medication with hormones rather than encourage it. There must be precise indication, which necessarily includes an understanding of the psychodynamic reactions of the patient to her own hormones. . . .

This investigation is the first in which daily material obtained by psychoanalytic technic is correlated with the result of endocrinologic assays. The authors are to be congratulated for the careful coordination of two methods which, despite the differences in their fields of observation, has provided a new tool for biologic research. The monograph is a milestone in the rapidly developing field of psychosomatic medicine.

**Heilbrigdisskýrslur. (Public Health in Iceland) 1939.** Samdar af landlækni eftir skýrslum héradslækna og ödrum heimildum. With an English summary. Paper. Pp. 196. Reykjavík: Ríkisprentsmidjan Gutenberg, 1941.

This report of public health conditions in Iceland for 1939 is a government publication prepared by the Ministry of Public Health. It is a well organized and comprehensive record of public health activities and statistics for the year, being modeled in format after the records of Denmark and Norway. The statistical tabulation and analysis of births, deaths and morbidity seem to be good, and the tables showing the distribution of diseases, causes of death, births and deaths by province have English or Latin headings so that they are easily analyzed by one with knowledge only of the English language. There also is a summary in English containing a table of the common communicable diseases for the period 1930-1939 inclusive together with short paragraphs discussing the various diseases, school inspections, care of infants, general insurance, food and nutrition, hospitals and immunization programs. Comparison of the birth, death and infant mortality rates with those of the United States for the same period is of great interest.

*Birth, Death and Infant Mortality Rates, Iceland and the United States,* 1939*

| | Iceland | United States |
|---|---|---|
| Births (per thousand of population) | 19.4 | 17.3 |
| Infant deaths (per thousand live births) | 37.3 | 48.0 |
| Deaths, all causes (per thousand of population) | 9.7 | 10.6 |

* U. S. Bureau of the Census.

*Death Rates per Hundred Thousand of Population for Selected Causes, Iceland and the United States **

| | Iceland | United States |
|---|---|---|
| Cancer | 140.5 | 117.5 |
| Pneumonia and influenza | 131.0 | 75.7 |
| Diseases of the heart | 104.3 | 275.5 |
| Tuberculosis | 81.0 | 47.1 |
| Accidents | 47.4 | 70.8 |
| Old age | 147.4 | 7.3 |

* U. S. Bureau of the Census.

The consistently high rates for the acute respiratory diseases are to be expected. This group includes, in addition to the acute upper respiratory diseases, "acute respiratory catarrh," bronchial pneumonia, lobar pneumonia and influenza. For the ten year period noted the morbidity rates for "acute intestinal catarrh" varying between 13.18 and 26.09 per thousand bear special note.

Among Iceland's greatest public health problems is tuberculosis. From 21 to 35 cases of leprosy were reported yearly for the period noted and 6 to 12 cases of hydatid disease with 3 to 11 deaths annually. The book is bound with paper, and the printing on good quality paper is excellent.

**Autonomic Regulations: Their Significance for Physiology, Psychology and Neuropsychiatry.** By Ernst Gellhorn, M.D., Ph.D., Professor of Physiology, College of Medicine, University of Illinois, Chicago. Cloth. Price, $5.50. Pp. 373, with 81 illustrations. New York: Interscience Publishers, Inc., 1943.

The subject matter is divided into five main parts: introductory—anatomic and physiologic foundation, adjustment reactions involving primarily the respiratory and circulatory system, autonomic-endocrine integration, autonomic-somatic integration and results and applications, physiologic and clinical. The discussion is based largely on work done in the author's own laboratory during the past six years. His chief interest is in the various organ reactions leading to a net result in the whole organism rather than in the physical and chemical basis of activity in any single organ. He tries to show that the autonomic nervous system is not only an efferent system carrying impulses from the somatic system to various visceral organs but also an afferent system whose impulses significantly alter the excitability of the somatic system. His studies also lead him to a reconsideration of the validity of the principle of reciprocal innervation as applied to the sympatheticoadrenal and the vagoinsulin systems. An attempt is made to utilize these studies for the problems of neuropsychiatry. This volume is too highly specialized to be of interest to physicians in general. However, the bibliography of eleven hundred references and the subject and author indexes make it a valuable reference book, of particular use to physiologists and clinical specialists.

**Acute Infections of the Mediastinum.** By Harold Neuhof, M.D., D.S., F.A.C.S., Clinical Professor of Surgery, Columbia University, New York, and Edward E. Jemerin, M.D., D.S., F.A.C.S., Associate Attending Surgeon, Sydenham Hospital, New York. Cloth. Price, $6. Pp. 407, with 157 illustrations. Baltimore: Williams & Wilkins Company, 1943.

The basis of this treatise is the experience gained with 100 cases of acute mediastinitis. These are divided into four groups: (1) mediastinitis secondary to esophageal trauma (of special importance is the fact that mediastinitis may result from instrumentation of the esophagus with nonpenetrating trauma of this passage), (2) those secondary to upper respiratory infections, (3) those secondary to pulmonary or pleural infections and (4) those of miscellaneous causation. The case presentations are rendered quite vivid by the publication of roentgenograms and accompanying line diagrams to emphasize the important features. There is a well written section on the surgical anatomy of the mediastinum, and the pathology and bacteriology of mediastinitis. The general clinical aspects are discussed in a separate section apart from the detailed case reports, with emphasis placed on roentgenologic diagnosis. Treatment is discussed in detail in the final section. The importance of correct surgical management is emphasized by the tables showing the comparative mortality among patients operated on and not operated on. Scant mention is made of the use of sulfonamides, but this undoubtedly is due to the fact that a large percentage of the patients were treated before the advent of these drugs. In the concluding remarks the authors state that "the chief purpose of this contribution is to call attention to the necessity of recognizing situations in which invasion of the mediastinum is likely to occur to the end that appropriate surgical measures are instituted which will prevent mediastinitis." The average practitioner or surgeon has limited experience and knowledge of the subject dealt with in this monograph. For this reason it constitutes an important contribution and should be in hospital libraries as a reference book. Needless to add, it should be available to all those specializing in diseases of the chest. Furthermore it will be of great value to those in military service, who will be faced with the problems of mediastinitis among casualties presenting wounds of the thorax or of those adjacent regions from which infection of the mediastinum may occur.

**Flying Men and Medicine: The Effects of Flying upon the Human Body.** By E. Osmun Barr, M.D. Cloth. Price, $2.50. Pp. 254, with 7 illustrations. New York & London: Funk & Wagnalls Company, 1943.

The author, a flight surgeon in the last war, attempts to give a readable presentation of problems of physiology and hygiene encountered by flying personnel. The book is divided into two parts, the first dealing with the nervous system and special senses, the second with other bodily systems including respiration, circulation and digestion. The language and presentation is elementary in the extreme, being pitched at the grade school rather than the high school or college level. Granted that basic training for flying personnel might advantageously begin with the 16 and 17 year olds, the present book will probably fall into the hands of men in their 20's. It is too elementary to be of real service and it can only suffer by comparison with other recent books in the same field, such as Grow and Armstrong's Fit to Fly and Gemmill's Physiology in Aviation.

**Sorderas sifilíticas: Ensayo de interpretación audiométrica.** Por el Dr. David Tieffenberg. Paper. Pp. 258, with illustrations. Buenos Aires, 1942.

The author, impressed by the large number of patients complaining of deafness showing positive serologic reactions despite absence of syphilitic antecedents, has selected 100 of them and has carried out a thorough clinical and serologic study. The variety of specific conditions studied precludes summarizing the conclusions reached, and the specialist will have to find them in the original thesis.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## EFFECTS OF ULTRAVIOLET IRRADIATION ON SCHOOL CHILDREN

*To the Editor:*—I seek an opinion as to the therapeutic value to be had by exposing the naked bodies of school pupils, who are found on examination to be undernourished, to ultraviolet rays. At this special school for the malnourished pupils it is the practice to afford such lamp (Hanovia) treatment to pupils for a period each day. While it is not a residential school, the pupils are furnished a warm, light form of nourishment on arrival and a full meal at noon. Pupils are also afforded a rest period on cots, medical and nursing supervision and menus prepared by a nutritionist. The pupil time necessary for all that is furnished for improvement of health is looked on with jealousy by those who have the responsibility for instruction in the traditional elementary subjects, so that they are asking for a cut in that now used for developing health, which was the prime object of this special school. Education of those physically handicapped is our responsibility. Naturally I wish to cooperate but hesitate to advise discontinuance of the lamp treatment without more information.

George J. Holmes, M.D., Newark, N. J.

ANSWER.—The most important and the most thoroughly demonstrated effects of ultraviolet irradiation of the exposed body are those relating to the phosphorus and calcium metabolism. Rickets and tetany in infancy and early childhood and the vitamin D deficiency type of osteoporosis in older children and adults can be prevented from developing or can be cured if already present by ultraviolet irradiation of the skin. Since vitamin D administration also has these particular effects, it may be substituted for the light treatment.

Many claims and counterclaims have been made regarding the less specific effects of this form of irradiation on general nutrition. Exact experimental data on this aspect of the problem are almost entirely lacking, although many conservative pediatricians and physical therapists believe from empirical experience that recovery from mild subacute pyogenic infections, nutritional anemia and slow or stationary weight gain is accelerated by ultraviolet treatments twice or thrice weekly. Final proof of its value in the treatment or prevention of these conditions is still wanting.

The third use of ultraviolet irradiation among children grouped together in homes, hospitals or school rooms is that of sterilizing the air. Proof that irradiation of the air by ultraviolet lamps tends to reduce the spread of certain infectious diseases has been furnished by carefully conducted experiments in several cities.

## EXPOSURE TO GASES IN MUNITIONS PLANT

*To the Editor:*—I should like an opinion on the damage that might occur from the inhalation of gases in a munitions plant. The various gases to which these workers are exposed are nitrous oxide, nitrous acid, phenol, ammonia, sulfuric acid and ammonium picrate. I am particularly interested in the effects of these gases, first, on the apparently normal individual and, second, on the individual having arrested or cured tuberculosis. Do you think that exposure to these gases might render a person exposed to them more susceptible to tuberculosis or cause a reactivation of the disease?

J. D. Riley, M.D., State Sanatorium, Ark.

ANSWER.—In general, munition plant gases may cause irritation especially of the respiratory tract, the eyes and to some degree of the skin. Then, following absorption, the agents will produce various forms and degrees of systemic poisoning. The most important of all the gases mentioned and probably the chief ones to be considered if poisoning of munition workers is being produced are, of course, the nitrous fumes. The symptoms and method of control of these were discussed at the conference on nitrous fumes on Jan. 28, 1943 at Cincinnati. The results of the conferences are summarized in the Industrial Hygiene, U. S. Public Health Service, **3**:6 (Feb.) 1943. In addition, other data on the subject are available in the article by A. J. Fleming (*Indust. Med.* **12**:131 [March] 1943). Phenol fumes, in addition to their well known local irritations, may cause systemic reactions in the form of lassitude, dizziness, headache, sallow skin and albuminuria. Ammonia, of course, would have its first effect on the eyes and upper respiratory tract. The chronic form of poisoning would chiefly be of the catarrhal type. Sulfuric acid fumes would also affect the respiratory tract. Ammonium picrate would chiefly cause eczematous dermatitis of the skin, but the fumes of this compound may dissociate into ammonia and picric acid and produce the characteristic reactions of each. Picric acid causes discoloration of the hair, skin and hands and various types of gastritis. The general recommendation of the Cincinnati conference on nitrous fumes with regard to the prevention of pulmonary irritation and systemic poisoning could be followed for all these other agents. It has been demonstrated that pulmonary irritation especially as concerns the pulmonary irritants of chemical warfare does not predispose to the development of pulmonary tuberculosis. However, people with pulmonary tuberculosis should not work with any of the pulmonary irritants, since aggravation of the tuberculosis may be produced. In most instances whenever possible it is preferred not to use people with a history of pulmonary tuberculosis healed, arrested or active lesions. The careful preplacement examination with its x-ray study will be of great help in determining the advisability of employing such a person.

## PROBABLE PELVIC HEMATOMA AFTER CHILDBIRTH

*To the Editor:*—A primipara aged 20 had an uneventful labor, delivering spontaneously a living male child weighing 7 pounds 11½ ounces (3,500 Gm.) cephalic presentation, left occipitoanterior position, with a moderately deep right mediolateral episiotomy which healed by first intention. The pelvic measurements are within normal limits. Early in pregnancy a glycosuria was discovered, and the fasting blood sugar was 180 mg. per hundred cubic centimeters. (Her mother died of diabetes and diphtheria.) The elevated blood sugar was controlled by diet and insulin. At present she is taking 10 units daily of protamine zinc insulin, and her fasting blood sugar is 100 mg. per hundred cubic centimeters. Otherwise her pregnancy was uncomplicated and the puerperium was uneventful. At the six weeks postpartum pelvic examination a tumor mass about 3 inches in diameter was found in the left side of the pelvis immediately within the vaginal introitus. This mass is bounded medially by the vagina and posteriorly by the rectum, and it is attached to the descending ramus of the pubis, the spine of the ischium and contiguous ligamentous structures. Its superior border lies about 1 inch above the level of the ischial spine and ½ inch posterior to the pubic symphysis. Its inferior border is at the tuberosity of the ischium. On the superior and anterior aspects of the mass are two nodules, firm and about ⅛ by ¼ inch in diameter. They seem to be closely attached to the mass. The mass itself is firm but fluctuant. The vaginal mucous membrane and the rectal wall are not attached to the mass, as determined by rectovaginal examination. The former and the vestibular glands appear normal. The uterus is freely movable. The left ovary could not be palpated, but other pelvic organs were normal and there was no unusual discharge. There is no history of venereal disease. Plain roentgenograms taken separately for soft and bony tissue fail to outline the tumor, and there are no striations and no moth eaten appearance suggesting malignancy or densities associated with a dermoid. The blood Kahn reaction was reported negative. The red and white blood cell counts are within normal limits, and the urinalysis is negative. The patient does not complain of symptoms, and she was unaware of the presence of the mass. On second examination, two weeks later, the tumor was perhaps slightly smaller but was still firm and fluctuant and not tender. It does not seem that the mass could have been its present size at delivery, as it now reaches the sagittal plane of the pelvic outlet. Please suggest differential diagnosis and any other lines of study and recommend treatment.

M.D., Washington.

ANSWER.—The mass described is most likely a hematoma which developed at the time of delivery as a result of the rupture of some blood vessel, probably a vein. Such hematomas can occur in the absence of major trauma. The patient should be observed periodically and the mass should slowly decrease in size, ultimately completely disappearing with residual induration.

The location of the mass described is not typical for a cyst that is the result of some embryologic vestige. Ovarian neoplasms are usually movable unless they are intraligamentous. A neoplasm of the ovary or uterus would probably have been recognized during pregnancy or delivery.

## STENOSED URETHRAL MEATUS IN YOUNG BOY

*To the Editor:*—I should like to inquire about the treatment of urethritis in a boy aged 2. Smears are negative for gonococci and there is no history of infection in the parents or those who have cared for the boy. The infection is of two weeks' duration and is not responsive to sitz baths, 5 per cent sulfathiazole ointment and sulfadiazine orally. The infection is restricted to the area about the glans penis and the terminal urethra. The boy is unable to urinate because of crusting over the meatus. He can urinate after a bath. Only pus cells appear on the smear. The Wassermann reaction is negative. Kindly discuss and suggest treatment.

M.D., Kansas.

ANSWER.—The condition described almost certainly indicates the presence of a stenosed urethral meatus. While it may appear to be of normal caliber from the surface it almost always, under the condition described, produces retention of the secretions which make for local nonspecific urethritis with secondary encrustations and obstruction to urination.

The treatment is meatotomy followed by local antiseptics. Perhaps urinary antiseptics by mouth should be employed also. This assumes that there is no gonorrhea, syphilis or chancroidal infection.

## SENSITIVITY TO MILK AND CHEESE—BUTTER AND OLEOMARGARINE

*To the Editor:*—Will you tell me whether in the making of cheese the lactalbumin of milk is broken down enough so that patients who tolerate boiled or evaporated milk may also use cheese? At the present time is butter likely to be adulterated with vegetable fat when bought by the pound or is it only in restaurants that one might find this?

M.D., Illinois.

ANSWER.—In the making of many varieties of cheese, lactalbumin is either removed to a large extent in the processing or it appears to become denatured. Many persons who are sensitive to milk are able to tolerate cheese without difficulty. There are so many factors involved, however, that a therapeutic test is indicated.

In regard to adulteration of butter, it is hardly likely that this would be done, because the offense is easily detected and is punishable by rather severe fines under both federal and state laws. It is the opinion of nutrition experts that oleomargarine can be substituted for butter in the usual diet without detriment, provided the oleomargarine has been suitably fortified with vitamin A in accordance with regulations of the Food and Drug Administration, which require a minimum of 9,000 U. S. P. units of vitamin A to the pound. Of course under wartime conditions of scarcity there is apt to be substitution of colored oleomargarine for butter with intent to deceive by unprincipled persons, but such acts are definitely in conflict with the law.

## HYPEROPIA AND SPASTICITY OF CILIARY MUSCLE

*To the Editor:*—A patient aged 29 complains of pain in the eyes and headache, particularly after close work. Visual acuity is 20/15 in the right eye and 20/15 minus 2 in the left eye. With the bichrome test the patient sees the letters better on the red side with each eye and requires a minus 0.5 concave lens to make the letters on the two sides appear equally distinct. Manifest refraction shows that the patient accepts minus 0.5 in both eyes with a correction to 20/15 in both eyes and the bichrome check equal. Retinoscopy shows that the patient requires minus 1/2 diopter in each eye, but on static refraction the patient accepts plus 0.25 in each eye with a visual acuity of 20/15 and bichrome check equal. This is a problem which I have encountered many times. Is it common for a person with a low myopia to accept a plus lens under mydriasis with homatropine? What is the proper treatment in such cases?

M.D., West Virginia.

ANSWER.—The inquirer states that the patient has a low myopia but that under homatropine mydriasis it is a low hyperopia. It is a common phase for a young person with a low degree of hyperopia to have a spastic condition of the ciliary muscle with the result that the manifest refraction indicates a low degree of myopia. That very spasm of the ciliary muscle is responsible for the pain in the eye and the headache that accompanies close use. The spasm of the ciliary muscle will be increased by the use of a myopic correcting glass, but it can be relieved either by the continuous use of the glass that is properly fitted under homatropine or by the use of a mydriatic for a period of several days to a week.

## LATERAL NYSTAGMUS

*To the Editor:*—Aside from congenital nystagmus, can a lateral nystagmus exist in apparently normal persons on extreme lateral gaze? Can a weakness of extraocular muscles give an illusion of a nystagmus and yet not be a true nystagmus? I have in mind a case wherein a neurologist claims nystagmus exists and a competent ophthalmologist says it does not.

M.D., New York.

ANSWER.—Yes, lateral nystagmus can occur in some normal persons on extreme lateral gaze. This is known as pseudonystagmus. This type consists in transitory, irregular jerky ocular movements. In weakness of extraocular muscles due to alcoholic polyneuritis, myasthenia gravis, quinine intoxications, nicotine poisoning and lead poisoning one may find nystagmus. This is a true nystagmus and is not an illusion. In ocular defects nystagmus occurs and consists in an inability to fix the gaze on an object.

## BLOOD TESTS ON BLOOD DONORS

*To the Editor:*—Can you inform me what blood tests are done on blood specimens taken from donors by the American Red Cross? I am particularly anxious to know what test is done to diagnose incipient tuberculosis or other tuberculosis by a blood test.

H. H. Holland, M.D., Red Lion, Pa.

ANSWER.—The only blood tests done by the Red Cross at the present time are the hemoglobin determination and the Wassermann test. No attempt is made to diagnose tuberculosis by a blood test, the presence of this and other infections being excluded by the history and physical examination.

## ESOPHAGEAL DIVERTICULUM

*To the Editor:*—Recently there has come under my observation a man aged 50 who gives a typical history of an esophageal diverticulum, with symptoms of this having been present for at least the past five years. Examination of the lower pharynx with the laryngeal mirror reveals an internal opening which is visible just below the base of the epiglottis and to the left. X-ray films made following the ingestion of barium sulfate present a picture typical of an esophageal diverticulum with a capacity of at least 4 or 5 ounces and extending down to the level of the angle of Louis. The question arises, because of the high position of the internal opening, as to whether this might be related to the branchial cleft. I should like to know something of the incidence of this sort of diverticulum and where I might find suitable literature concerning it.

Robert B. Morrison, M.D., Colorado Springs, Colo.

ANSWER.—The case presented is that of a typical Zenker's diverticulum, and it is usually situated above the upper sphincter of the esophagus. These are amenable to surgical procedures in the hands of a good surgeon, and the physician is referred to diverticula of the esophagus, page 437, chapter by Porter P. Vincent, M.D., in Diseases of the Digestive System, edited by Sidney A. Portis (Philadelphia, Lea & Febiger, 1941).

## MUSCLE PAIN ASSOCIATED WITH THYROID ADMINISTRATION

*To the Editor:*—Can you offer an explanation for the excruciating, twisting muscle pains which sometimes appear when a patient who has been taking thyroid discontinues the preparation and which disappear when the preparation is resumed? It is my impression that the patient in question has had some intoxication with thyroid, perhaps over a period of many years.

Louis J. Bailey, M.D., Detroit.

ANSWER.—In a large experience with hypothyroidism, muscle pain of this type has never been seen to develop when thyroid administration is omitted but has been seen when thyroid is first given in a fairly large dose to a myxedematous person. Following the intravenous administration of 10 mg. of thyroxine to such a patient all the muscles may be so tender that the patient is unable to sleep and this muscle tenderness may be associated with a rise in temperature to as high a level as 104 F. There may be nausea and vomiting. The muscle pain lasts from two to three weeks and then disappears completely in spite of continuing thyroid. The pain is probably related to the sudden changes which occur in the chemistry of the muscle.

## DENTAL NEURALGIA

*To the Editor:*—A married woman aged 47 had the roots of the left upper incisors and canine teeth removed in September 1942. Since then she has been complaining of a pulling sensation over the left cheek, on the left eye and forehead, which has been annoying. There is slight tenderness just below and medial to the left infraorbital foramen. There are no other physical findings. X-ray examination of the upper jaws and sinuses is negative. Kindly discuss the diagnosis, treatment and probable duration of this condition.

Samuel Sunshine, M.D., East Milton, Mass.

ANSWER.—This patient probably has a dental neuralgia due to disease in the gums of the left upper jaw. Despite the fact that roentgenograms of this region fail to show any abnormalities, there may be present in the gums another root that is exposed or there may be some caries. A competent dentist should examine this patient in detail looking for roots, caries and small openings. He should use a dental mirror. The treatment consists in removal of the foreign substance, treatment of the caries or finally laceration of the gums. This case does not appear to be a trigeminal neuralgia but a dental neuralgia. The pain should disappear when the cause is removed.

## EXERCISE AFTER CARDIAC INFARCTION

*To the Editor:*—I read with great interest from page 1350 of the Dec. 19, 1942 issue of The Journal an answer dealing with the question of exercise after complete healing of mild cardiac infarction. There I read "Exercise . . . is probably desirable in the effort to maintain a good general state of health as well as to help to control obesity and to prevent a sluggish peripheral circulation." As one of those physical educators who sees value in exercise, I am of course overjoyed at this recognition of exercise in the management of recovered heart cases. But in spite of my pleasure I do not agree entirely with the enthusiastic answer of this query. It is hard to imagine the person with mild cardiac infarct who is able to do enough exercise to control obesity. Thus, for example, in order to work off 1 pound of body fat one would have to walk 144 miles at the rate of 1 mile in thirty minutes; one would have to fence for eight hours or do parallel bar work for seven and one-half hours. I could not recommend such doses for patients with heart disease. It would be too much of an overload even in the judgment of an exercise physiologist.

Arthur H. Steinhaus, Chicago.
Professor of Physiology, George Williams College.